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Status of Atlantic salmon (*Salmo salar* L.) stocks of insular Newfoundland (SFAs 3-14A), 2000

État des stocks de saumons atlantique (*Salmo salar* L.) de l'île de Terre-Neuve (ZPS 3-14A) en 2000

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Abstract

The commercial Atlantic salmon fishery moratorium, implemented in insular Newfoundland in 1992, entered its ninth year in 2000. Returns of small salmon to monitored rivers on the northeast and east coasts in 2000 decreased from 1999 and the 1992-1999 means, being most pronounced in SFA 4 and for Exploits River in particular. Returns to Exploits river in 2000 were below the previous low for the moratorium years that occurred in 1997. In contrast, returns to Conne River in southern Newfoundland in 2000 improved markedly over 1999 and the 1992-1999 mean. For other monitored rivers in southern Newfoundland, returns of small salmon to Northeast River, Placentia in 2000 increased substantially over 1999 (in which year the lowest returns of the moratorium years occurred) but still fell below the mean for 1992-1999, while returns to Northeast Brook, Trepassey and Rocky River decreased. With the exception of Highlands River, total returns of small salmon to rivers in Bay St. George (located in SFA 13) in 2000 improved over or were similar to returns in recent years. On the northwest coast, Western Arm Brook showed an increase in returns of small salmon over 1999 and the 1992-1999 mean while the reverse was true for Lomond and Torrent rivers. Returns of large salmon in 2000 decreased from 1999 in 8 out of 14 monitored rivers and were below the means for 1992-1999 in most cases. The proportions of large salmon in total returns for 7 out of 14 rivers in 2000 increased over 1999 and the 1992-1999 means; for the remaining rivers which showed decreases from 1999, most remained similar to the mean for 1992-1999. Sea survival for small salmon improved markedly for Conne River and Western Arm Brook in 2000; Campbellton River (SFA 4) and Highlands River had declines while Northeast Brook, Trepassey and Rocky River (both in SFA 9) showed slight increases. Compared to 1999, smolt production in 2000 decreased from 5 to 25% for four of the six monitored rivers and has declined consistently each year since 1997. Where smolt production has fallen, returns of small salmon in 2001 are expected to decline from 2000 levels, unless there are increases in sea survival to compensate for the reduction in numbers of smolts.

Résumé

Le moratoire sur la pêche commerciale du saumon de l'Atlantique, qui est entré en vigueur à l'île de Terre-Neuve en 1992, entamait sa neuvième année en 2000. Les remontes de petits saumons dans les rivières surveillées des côtes nord-est et est de Terre-Neuve ont diminué en 2000 par rapport à 1999 et par rapport aux moyennes de 1992-1999, et c'est pour la ZPS 4 et la rivière Exploits en particulier que la baisse a été la plus prononcée. En 2000, les remontes vers la rivière Exploits ont été inférieures au creux antérieur, atteint en 1997, pour la période du moratoire. Par contre, en 2000, les remontes vers la rivière Conne, dans le sud de Terre-Neuve, ont considérablement augmenté par rapport à 1999 et à la moyenne de 1992-1999. Pour les autres rivières surveillées du sud de Terre-Neuve, les remontes de petits saumons vers la rivière Northeast, Placentia, ont augmenté considérablement par rapport à 1999 (année où les remontes ont été les plus faibles pour la période du moratoire) mais sont demeurées en deçà de la moyenne de 1992-1999, alors que les remontes vers le ruisseau Northeast, Trepassey, et la rivière Rocky ont diminué. À l'exception de la rivière Highlands, les remontes totales de petits saumons vers les rivières de la baie St-Georges (situées dans la ZPS 13) se sont améliorées par rapport aux remontes des dernières années, ou ont été comparables. Sur la côte nord-ouest, dans le ruisseau Western Arm, la remonte de petits saumons a augmenté par rapport à 1999 et à la moyenne de 1992-1999 alors que c'est l'inverse en ce qui concerne les rivières Lomond et Torrent. En 2000, les remontes de grands saumons ont diminué par rapport à 1999 dans huit des quatorze rivières surveillées et ont été inférieures aux moyennes de 1992-1999 dans la plupart des cas. Dans sept des quatorze rivières, la proportion de grands saumons dans les remontes totales a augmenté en 2000 par rapport à 1999 et aux moyennes de 1992-1999; en ce qui concerne les autres rivières où les remontes ont diminué par rapport à 1999, elle est demeurée dans la plupart des cas semblable aux moyennes de 1992-1999. La survie en mer des petits saumons s'est considérablement améliorée dans le cas de la rivière Conne et du ruisseau Western Arm en 2000; il a diminué pour ce qui est de la rivière Campbellton (ZPS 4) et de la rivière Highlands, tandis qu'il a légèrement augmenté dans le cas du ruisseau Northeast, Trepassey et de la rivière Rocky (ZPS 9). Par rapport à 1999, la production de smolts, qui ne cesse de diminuer depuis 1997, a encore diminué par 5 % à 25 % en 2000 pour quatre des six rivières surveillées. On s'attend à ce que les remontes de petits saumons en 2001 diminuent par rapport aux niveaux de 2000, là où la production de smolts a diminué, à moins qu'une augmentation du taux de survie en mer ne compense la diminution du nombre de smolts.

Introduction

This paper presents the general status of Atlantic salmon stocks in Salmon Fishing Areas (SFAs) 3-14A of the Newfoundland Region (Fig. 1) in 2000. Catch and effort data from the recreational fishery and counts at fishways and counting fences are examined in relation to historical data and management measures in effect in 2000.

Management measures, past and present

The moratorium on the commercial Atlantic salmon fishery in insular Newfoundland continued in 1999. The implementation of the moratorium in 1992 was accompanied by a commercial license retirement program and followed a major management plan introduced in 1984 (O'Connell *et al.* 1992a; May 1993; Mullins and Caines MS 1994), elements of which were continued into the quota years of 1990 and 1991 (O'Connell *et al.* MS 1992b) and the moratorium years. These regulations continue a long-standing history of management programs designed to prevent stock declines and to allow populations to rebuild (May 1993).

The moratorium placed on the Northern Cod Fishery in 1992, which should have eliminated by-catch in cod fishing gear in SFAs 1-9, continued in 2000. There was a small inshore index cod fishery in this area in September-October in 1998, which is mainly outside the migration period of June-early September for most Atlantic salmon destined for insular Newfoundland rivers. In 1999, there was a limited commercial fishery for cod with a total allowable catch (TAC) of 9000 t (Anon. 1999a). In 2000, there was a TAC of 7000 t allocated to an index fishery (CSAS 2001a). A moratorium was placed cod fishing in SFAs 10-14A in August 1993. In 1997, the cod fishery in SFAs 10 and 11 opened for the first time since 1993 with a TAC of 10000 t; the quota was increased to 20000 t in 1998 and to 30000 t in 1999, but decreased again to 20000 t in 2000 (CSAS 2000). This fishery opened in April/May and continued through the summer into autumn and winter. There were limited cod fisheries in NAFO areas 4RS and 3PN (which includes SFAs 12-14A) from June through autumn in 1997-2000 (CSAS 2001b). Collectively, these cod fisheries were prosecuted mainly with fixed gear (gillnets), hand line, and long line and did not involve the use of cod traps, which traditionally accounted for the major portion of Atlantic salmon by-catch.

A quota on the number of small salmon (< 63 cm in fork length) that could be retained in the Atlantic salmon recreational fishery was introduced in each SFA in 1992 and 1993. The quota was assigned for each SFA as a whole as opposed to individual river quotas. Only hook-and-release fishing was permitted after the quota was caught in each SFA. Quotas were eliminated in 1994. The seasonal bag limit for the retention of small salmon was lowered from eight to six fish in 1994, three to be caught prior to July 31 and three after that date. Hook-and-release fishing only was permitted after the bag limit of three was reached in each time period. These measures remained in effect in 1995-1997. Returns of small salmon to many rivers in insular Newfoundland in 1997 were substantially lower than expected (Dempson *et al.* MS 1998; O'Connell *et al.* (MS 1998a). As a result of this and uncertainties regarding levels of future returns, the management plan for 1998 was much more conservative than for previous years. The seasonal bag limit for the retention of small salmon in insular Newfoundland was reduced to one, pending the results of an in-season review. As a result of the findings of the in-season review, anglers were allowed to additionally retain three small salmon from July 4 until

the end of the angling season. Beginning on July 8, 1998 only the use of barbless hooks was permitted. As in previous years, the retention of large salmon (≥ 63 cm in fork length) was not permitted in insular Newfoundland in 2000.

A three-year management plan was implemented in 1999, a significant component of which was the introduction of a River Classification System for insular Newfoundland, used to develop retention levels based on the health of individual stocks, without jeopardising conservation goals. This was a major departure from previous years when stocks were managed on a more regional or SFA basis. Details of the three-year plan and a description of the River Classification System are provided in Anon. (1999b).

Special management measures were in effect for several rivers in 2000 and a number of rivers were closed for the season, details of which are provided in Anon. (2000). More details on openings and closures throughout the season on a river-specific basis, including times when rivers were closed due to high water temperatures and low water levels, are presented in Table 1.

As was the case for the period 1995-1999, there were fall hook-and-release fisheries (September 8-October 7) in Gander River (SFA 4) and in Humber River (SFA 13) in 2000.

For the five-year period immediately preceding the commercial salmon fishery moratorium, the average number of recreational fishery licenses sold in Newfoundland and Labrador was 24493. Maximum license sales prior to the moratorium were recorded in 1988 (26445). By comparison, sales during the moratorium years were 25718 (1992), 26508 (1993), 22596 (1994), 21489 (1995), 25553 (1996), 21175 (1997), 17949 (1998), 17926 (1999), and 15,941 (preliminary) in 2000.

Methods

Recreational fishery catch and effort data and fishway and counting fence data were added to that presented in O'Connell *et al.* (MS 2000). Prior to 1997, recreational fishery data were compiled as described by Ash and O'Connell (1987a,b) and Mullins and Claytor (1989). Catch statistics for both retained and released small salmon were used in 1992-2000. There was no estimate of released fish during the period of retention of catch in 1992, which could impact on comparisons. Catches of small salmon for all years prior to 1992 are retained catches only. Information for released large salmon has been available since 1985 for SFAs 12 and 13. Recreational fishing effort was presented as rod days, defined as any day or part of a day on which an angler fishes.

Angling data were provided by Department of Fisheries and Oceans (DFO) River Guardians for all of insular Newfoundland and Labrador prior to 1997. Angling data for insular Newfoundland in 1997-2000 were derived from the License Stub Return System (see O'Connell *et al.* (MS 1998b) for a description of the methodology). The information for 2000 is preliminary at this stage. The License Stub Return System for collecting recreational fishery data represents a complete departure from the previous DFO River Guardian method. Details of

a comparison of stub data with DFO River Guardian data, for rivers in insular Newfoundland for 1994-1996, are provided in O'Connell *et al.* (MS 1998b). Overall, estimates of released small and large salmon from the stub were substantially higher than estimates from River Guardians, while the two methods were closer with respect to estimates of small salmon retained. This has to be kept in mind when comparing catches in 1997-2000 with previous years. There is evidence that effort expenditure was under-reported by the stub method and hence this information will not be used in the present document for 1997-2000. Analyses are currently being carried out to adjust for under-reporting.

Recreational fishery catch and effort information and counts of salmon at counting facilities in 2000 were compared to two pre-salmon moratorium means (1984-1989 and 1986-1991). The 1984-1989 mean corresponds to years under major management changes in the commercial fishery in the Newfoundland Region (O'Connell *et al.* 1992a). The commercial fishery in each SFA in insular Newfoundland in 1990 and 1991 was under quota control (O'Connell *et al.* MS 1992b). The 1986-1991 mean incorporates the quota years of 1990 and 1991. The mix of management measures in effect during 1984-1989 on the one hand and the imposition of commercial quotas in 1990 and 1991 on the other, should be kept in mind when making evaluations based on the 1986-1991 mean. For all SFAs except 12-14A, the year 1987 was not included in the means because drought conditions resulted in the closure of most rivers to angling for the greater part of the season. During the moratorium years, recreational fishery data in 2000 for insular Newfoundland were compared to the means for 1992-1996 and 1997-1999 (data were derived from the License Stub System since 1997, as seen above). Angling information (River Guardian data) for SFAs 12 and 13 were incomplete in 1996, hence data from the License Stub Return System were used for these SFAs (included in the mean for 1992-1996). Counts of adult salmon during the moratorium were compared to the mean for 1992-1999.

Total river returns of small and large salmon (which typically are counts at counting facilities plus angling removals below counting facilities plus an adjustment for hook-and-release mortality), in 2000, were assessed against 1999 and mean returns for the moratorium period 1992-1999. Total river returns values for individual rivers differ slightly from one year to the next as angling data in the current year are preliminary. References for river-specific methodologies used for the calculation of total river returns of small and large salmon can be found in CSAS (2001c).

Means and 95% confidence intervals for ratios were calculated according to Cochran (1977).

Results and Discussion

Smolt-to-adult (small salmon) survival

The smolt-to-adult survival (repeat spawners included) of 3.8% for Campbellton River in 2000 (adult year) decreased from 1999, and was the second lowest of the time series (Table 2); the highest survival for this river occurred in 1994 (9.0%). A survival of 5.8% was observed

for Northeast Brook, Trepassey (SFA 9) in 2000, a slight improvement over that of 1999 (5.5%) and low compared to the record high of 1996 (9.2%). Rocky River (SFA 9) recorded a survival of 3.2%, an improvement over the past two years. Survival for Conne River (SFA 11) in 2000 (8.1%) improved markedly over that of 1999 (3.4%), attaining the second highest value of the time series. The highest survival for Conne River (10.2%) was reached in 1988. For Highlands River (SFA 13), survival in 2000 (0.6%) was well below that of 1999 (2.5%) and the lowest of the time series. Survival for Western Arm Brook (SFA 14A) in 2000 (11.1%) was by far the highest of the moratorium years and the second highest on record (the high of 12.1% occurred in 1979.

Fig. 2 shows graphically the trends in sea survival for the rivers mentioned above. Survival adjusted for marine exploitation (from Dempson *et al.* MS 1998) is also shown for Conne River, Northeast Brook, Trepassey, and Western Arm Brook. During the moratorium years, estimates of sea survival from smolts to adult small salmon are believed to represent natural survival rates. Pre-moratorium adjusted survival rates approaching 15% were achieved in Conne River and Northeast Brook, Trepassey. Ocean survival for both of these stocks fell throughout the late 1980s and early 1990s. Despite major changes to fisheries and corresponding reductions in marine exploitation, sea survival rates for Conne River (including the result for 2000) and Northeast Brook, Trepassey remain low, as highlighted by the adjusted sea survival rates. The same statement holds for Western Arm Brook, in spite of the increase in survival in 2000, if several years prior to 1985 (the earliest year shown in Fig. 2) presented in Table 2 were adjusted for marine exploitation.

Recreational fishery and counts at counting facilities

Recreational catches of small and large salmon for insular Newfoundland (SFAs 3-14A combined) are presented in Appendix 1a. Data for insular Newfoundland were also rolled into four subdivisions, Northern Peninsula East and Eastern (SFAs 3-8), South (SFAs 9-11), Southwest (SFAs 12-13), and Northern Peninsula West (SFA 14A) and are shown in Appendix 1b-e. Data for each individual SFA are shown in Appendix 1f-q. Calculation of catch per unit of effort (CPUE) is in terms of small and large retained and released fish combined.

Entire Insular Newfoundland (SFAs 3-14A)

Recreational fishery

The total catch (retained + released) of small salmon in the recreational fishery in all of insular Newfoundland in 2000, decreased from 1999 and was below the 1992-1996 and 1997-2000 means (Fig. 3). The number of small salmon retained was the lowest in the time series.

Northern Peninsula East and Eastern (SFAs 3-8)

Recreational fishery

The total catch of small salmon in 2000 decreased from 1999 and was below the 1992-1996 and 1997-2000 means (Fig. 4). The number of small salmon retained was the lowest of the time series.

Counting facilities

SFA 3: The counting fence in Northwest Branch tributary of Main River (Sop's Arm) was not operated in 2000.

SFA 4: Counts of small (Table 3) and large (Table 4) salmon are available for fishways located in the Exploits River (Bishop's Falls) and Salmon Brook tributary of Gander River and a counting fence in Campbellton River. The counting fence on the main stem of the Gander River did not operate in 2000. Counts of small and large salmon for Exploits River in 2000 decreased markedly from 1999 and the 1992-1999 means; the count of small salmon was similar to that of the 1984-1989 mean and above the 1986-1991 mean, while the count of large salmon remained well above these means. Counts of small and large salmon in Campbellton River decreased from 1999 and the 1992-1999 means. The count of small salmon in Salmon Brook tributary of Gander River in 2000 decreased from 1999 and the 1984-1889 and 1992-1999 means, but was similar to the mean for 1986-1991; the count of large salmon decreased from 1999 and the 1992-1999 mean but remained above the 1984-1989 and 1986-1991 means.

SFA 5: Counts of small (Table 3) and large (Table 4) salmon are available from fishways in Middle Brook and the upper Terra Nova River and a counting fence in Northwest River, Terra Nova National Park. There was no adult enumeration at the lower Terra Nova River fishway in 2000. The count of small salmon in Middle Brook in 2000 decreased slightly from 1999 and was similar to the mean for 1992-1999, but showed an increase over the means for 1984-1989 and 1986-1991; the count of large salmon increased over 1999 and each mean. The count of small salmon at the upper Terra Nova River fishway in 2000 decreased from that of 1999 and the 1992-1999 mean but increased over the 1984-1989 (slightly) and 1986-1991 means; the count of large salmon increased over 1999 and the 1984-1989 and 1986-1991 means but remained below the 1992-1999 mean. The count of small salmon for Northwest River in 2000 was the lowest of the time series; the count of large salmon increased over 1999 but remained below the 1992-1999 mean.

South (SFAs 9-11)

Recreational fishery

The total catch of small salmon in 2000 increased over 1999 and the 1997-1999 mean but remained below the 1992-1996 mean (Fig. 5). The number of small salmon retained increased over 1999 and was similar to the mean for 1997-1999 but well below the mean for 1992-1996.

Counting facilities

SFA 9: Counts of small (Table 3) and large (Table 4) salmon are available from a counting fence in Northeast Brook, Trepassey and a fishway in Rocky River. Counts of small and large salmon in Northeast Brook, Trepassey in 2000 decreased from 1999 and the 1984-1989 and 1986-1991 means but increased slightly over the 1992-1999 means. The count of small salmon in Rocky River decreased from 1999 and the 1992-1999 mean and increased over the 1984-1989 and 1986-1991 means; the count of large salmon increased over 1999 and the means.

SFA 10: Counts of small (Table 3) and large (Table 4) salmon are provided by a fishway located in Northeast River, Placentia. The count of small salmon in 2000 increased over 1999 and was similar to the 1984-1989 and 1986-1991 means, but decreased from the 1992-1999 mean; the count of large salmon increased over 1999 and the means.

SFA 11: Counts of small (Table 3) and large (Table 4) salmon are available from a counting fence in Conne River. The counting fence in Little River was not operated in 2000. The count of small salmon for Conne River in 2000 increased over 1999 and the 1992-1999 mean but remained below the means for 1984-1989 and 1986-1991; the count of large salmon decreased from 1999 and the 1984-1989 and 1986-1991 means and increased over the 1992-1999 mean.

Southwest (SFAs 12-13)

Recreational fishery

The total catch of small salmon in 2000 decreased slightly from 1999 and the 1992-96 mean but showed a more pronounced decline from the 1997-1999 mean (Fig. 6). The number of small salmon retained decreased slightly from 1999 and was similar to the mean for 1997-1999, but decreased from the 1992-1996 mean. The number of large salmon released decreased from 1999 and the 1997-1999 mean and was similar to the 1992-1996 mean.

Counting facilities

SFA 13: Counts of small (Table 3) and large (Table 4) salmon are available from counting fences in Highlands River and Pinchgut Brook. Mark-recapture population estimates of returns of small and large salmon to Humber River were not available in 2000. Counts of both small and large salmon in Highlands River in 2000 decreased from 1999 and the 1992-1999 means. A similar pattern was noted for Pinchgut Brook for both size components.

Northern Peninsula West (SFA 14A)

Recreational fishery

Both the total catch of small salmon and the number of small salmon retained in 2000 decreased from 1999 and the 1992-1996 and 1997-1999 means (Fig. 7). The number of small

salmon retained was the lowest on record. The number of large salmon released decreased from 1999 and the means.

Counting facilities

Counts of small (Table 3) and large (Table 4) salmon are available from fishways located in Lomond River and Torrent River and a counting fence in Western Arm Brook. The count of small salmon in Lomond River in 2000 decreased from 1999, was similar to that of the 1992-1999 mean, but remained above the means for 1984-1989 and 1986-1991; a similar pattern was noted for large salmon. The count of small salmon in Torrent River in 2000 decreased from 1999 (slightly) and the 1992-1999 mean and increased over the 1984-1989 and 1986-1991 means; the count of large salmon increased over 1999 and the means. Counts of small and large salmon in Western Arm Brook in 2000 increased over 1999 and the means.

Total returns

Total returns of small and large salmon to rivers in insular Newfoundland are presented in Tables 5 and 6. The information contained in Tables 5 and 6 is also presented graphically below. Since the closure of the commercial salmon fishery in 1992, returns of small and large salmon to rivers are assumed to be total population sizes.

Northern Peninsula East and Eastern (SFAs 3-8)

SFA 4

Total returns of small (Table 7) and large (Table 8) salmon to Exploits River and Gander River in 2000 (Figs. 8 and 9) decreased from 1999 and the 1992-1999 means. Since there was no angling below the counting fence in Campbellton River, total returns are the same as the counts, which have been dealt with previously. Returns of small and large salmon to Campbellton River are shown graphically in Figs. 8 and 9.

The proportions of large salmon in total returns to Exploits, Campbellton, and Gander rivers in 2000 decreased from 1999 but were similar to the means for 1992-1999 (Table 9 and Fig. 10).

SFA 5

Total returns of small salmon to Middle Brook (Fig. 11) in 2000 decreased slightly from 1999 and the 1992-1999 mean (Table 7). Total returns to Northwest River are equivalent to the count at the counting fence (Fig. 11), dealt with previously.

Total returns of large salmon to Middle Brook (Fig. 12) increased over 1999 and the 1992-1999 mean (Table 8). Total returns to Northwest River are equivalent to the count at the counting fence (Fig. 12), dealt with previously.

The proportion of large salmon in total returns (Table 9 and Fig. 13) for Middle Brook in 2000 increased over 1999 and the 1992-1999 mean. The proportion for Northwest River was one of highest recorded.

South (SFAs 9-11)

SFA 9

Since there was no angling in Northeast Brook, Trepassey and Rocky River, total returns of small and large salmon are equivalent to the counts at the counting facilities and these were dealt with previously. Returns for small and large salmon are shown graphically in Figs. 14 and 15.

The proportions of large salmon in total returns to Northeast Brook, Trepassey and Rocky River in 2000 were the highest of the moratorium years (Table 9 and Fig. 16).

SFA 10

Total returns of small salmon to Northeast River, Placentia in 2000 (Fig. 17) increased over 1999 but remained below the 1992-1999 mean (Table 7).

Total returns of large salmon to Northeast River, Placentia in 2000 (Fig. 18) were the second highest recorded (1998 was highest year on record) and remained above the means (Table 8).

The proportion of large salmon in total returns to Northeast River, Placentia in 2000 (Table 9 and Fig. 19) was similar to that of 1999, the highest year on record.

SFA 11

Total returns of small salmon to Conne River in 2000 (Fig. 20) increased over 1999 and the 1992-1999 mean (Table 7).

Total returns of large salmon to Conne River (Fig. 21) decreased from 1999 but remained above the mean for 1992-1999 (Table 8).

The proportion of large salmon in total returns to Conne River in 2000 decreased from 1999 and the 1992-99 mean (Table 9 and Fig. 22).

Southwest (SFAs 12-13)

SFA 13

Total returns of small (Fig. 23) and large (Fig. 24) salmon to Highlands River and Pinchgut Brook are equivalent to the counts at the counting fences (no angling in Highlands and

the result of the method of calculation of total returns for Pinchgut), all of which were dealt with previously.

The proportion of large salmon in total returns for Highlands River in 2000 was among the highest recorded (Table 9 and Fig. 25). The proportion for Pinchgut Brook decreased from 1999 and the 1992-1999 mean.

Northern Peninsula West (SFA 14A)

Total returns of small salmon to Lomond and Torrent rivers in 2000 (Fig. 26) decreased form 1999 and the 1992-1999 mean (Table 7). Total returns of small salmon to Western Arm Brook (Fig. 26) increased over 1999 and the 1992-1999 mean.

Total returns of large salmon in 2000 (Table 8 and Fig. 27) decreased from 1999 and the 1992-1999 mean for both Lomond and Torrent rivers while Western Arm Brook showed increases.

The proportion of large salmon in total returns to Lomond River in 2000 (Table 9 and Fig. 28) decreased from 1999 but was similar to the 1992-1999 mean. Proportions for Torrent River and Western Arm Brook were among the highest recorded.

Net marks

The incidence of net-marked fish has been determined for a number of rivers throughout insular Newfoundland since 1994. The results for small and large salmon combined are presented below:

River	1994	1995	1996	1997	1998	1999	2000
Gander River[1]	15.9	8.9	12.2	15.9	2.9	5.2	3.9
Campbellton River	6.2	5.0	4.3	4.3	5.8	4.1	11.4
Middle Brook				15.8	11.6	4.5	7.7
Terra Nova River				2.9	1.2	3.1	
Northeast Riv., Plac.							7.5
Conne River	18.6	7.1	6.2	7.2	3.7	4.0	3.3
Harry's River			0.6	9.3	1.8	0.1	2.6
Humber River		1.4	2.6	7.6	4.1	2.4	

[1]Determined at the fishway in Salmon Brook tributary in 2000 and at the counting fence in other years

The incidence of net marks in 2000 increased over 1999 in Campbellton River, Middle Brook, and Harry's River, with the increase being most pronounced for Campbellton River. Decreases

were noted for Gander and Conne rivers. Net marks were likely the result of encounters with both legally set gear for other species and illegal gear in the marine environment and with illegal gear in freshwater. It is not possible to estimate the extent of such removals, therefore, total returns considered in the context of being equivalent to total production during the moratorium, have to be regarded as minimum values.

Summary and Conclusions

Returns of small salmon to monitored rivers on the northeast and east coasts in 2000 decreased from 1999 and the 1992-1999 means, being most pronounced in SFA 4 and for Exploits River in particular. Returns to Exploits river in 2000 were below the previous low for the moratorium years that occurred in 1997. The decreased returns to these northeast and east coast rivers is consistent with the decline in sea survival recorded for Campbellton River in 2000. In contrast, returns to Conne River in southern Newfoundland in 2000 (the highest since 1990) improved markedly over 1999 and the 1992-1999 mean; sea survival for Conne River in 2000 was the second highest on record. With respect to other southern Newfoundland rivers, returns of small salmon to Northeast River, Placentia in 2000 increased substantially over 1999 (in which year the lowest returns of the moratorium years occurred) but still fell below the mean for 1992-1999, while returns to Northeast Brook, Trepassey and Rocky River decreased. With the exception of Highlands River (this report), estimated total returns of small salmon to rivers in Bay St. George (located in SFA 13) in 2000 (see Porter MS 2001) improved over or were similar to returns in recent years. On the northwest coast, Western Arm Brook showed an increase in returns of small salmon over 1999 and the 1992-1999 mean while the reverse was true for Lomond and Torrent rivers. Sea survival for Western Arm Brook in 2000 was one of the highest on record. In spite of greatly increased spawning escapements beginning with the moratorium in 1992 (Table 10), returns of small salmon to most rivers on the northwest, northeast, and east coasts in 2000 decreased from the mean for 1992-99. Returns of small salmon in recent years to Northeast Brook (Trepassey) and Conne River (returns for 2000 notwithstanding), were lower than the average for the five years prior to the moratorium.

Returns of large salmon in 2000 decreased from 1999 in 8 out of 14 monitored rivers and were below the mean for 1992-1999 in most cases. The proportions of large salmon in total returns for 7 out of 14 rivers in 2000 increased over 1999 and the 1992-1999 means; for the remaining rivers which showed decreases from 1999, most remained similar to the mean for 1992-1999.

Management changes in the recreational fishery, specifically the implementation and changing of quotas in SFAs along with mandatory hook-and-release fishing, and changing daily and seasonal bag limits, have seriously compromised the usefulness of angling data in terms of comparability with the past, especially when used as indices of abundance. Also, there have been variable and prolonged closures of rivers to angling over the years due to low water levels and high water temperatures (Dempson *et al.* 2001). Added to this are the confounding elements associated with the derivation of 1997-2000 angling data from the License Stub Return System. In the interpretation of trends and drawing of conclusions with respect to abundance, more weight is placed on information obtained from counting facilities than on recreational

fishery data. Recreational catches for all of insular Newfoundland in 2000 showed an overall decrease from 1999 and the means. This trend held true for northwest, northeast and east coast rivers while for the south coast increases (albeit below average) were noted. The catch of small salmon for the southwest coast in 2000 was similar to 1999 while the number of large salmon released showed a decline. Compared to 1999 (O'Connell *et al.* MS 2000), closures to angling for high water temperatures and low water levels were not as extensive in 2000.

Compared to 1999, smolt production in 2000 decreased from 5 to 25% for four of the six monitored rivers. Smolt production has declined consistently each year since 1997 for these rivers, which may be indicative of other rivers in insular Newfoundland. Where smolt production has fallen, returns of small salmon in 2001 are expected to decline from 2000 levels unless there are increases in sea survival to compensate for the reduction in numbers of smolts.

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Table 1. Opening and closure dates of the Atlantic salmon recreational fishery for each SFA, and variations by river, 2000.

River	Class	Close dates	Reason for closure
SFA 1 June 15 - September 15			
SFA 2 June 15 - September 15			
SFA 3 June 15 - September 7			
Western Brook	II	August 16 - 21	Low water levels & high water temperatures
Salmon River	II	August 16 - 17	"
Eastern Brook	II	August 16 - 21	"
Northeast River (Roddickton)	II	"	"
Beaver Brook	II	"	"
Northwest Brook	II	"	"
Cloud River	II	"	"
Soufletts River	II	August 9 - 11	"
Little Harbour Deep River	II	"	"
Coney Arm River	III	"	"
Main River (Sop's Arm)	II	"	"
Hampden River	III	"	"
Wild Cove Brook	II	"	"
Western Arm Brook	II	"	"
Middle Arm Brook	II	"	"
Southern Arm Brook	II	"	"
Baie Verte River	II	"	"
Woodstock Brook	II	"	"
SFA 4 June 15 - September 7			
Burlington River	II	August 9 - 11	Low water levels & high water temperatures
Indian River	II	August 9 - 17	"
West River	II	"	"
South Brook	II	"	"
Tommy's Arm River	II	"	"
Northwest Arm Brook	II	"	"
Western Arm Brook	II	"	"
Leamington River	II	"	"
Charles Brook	II	"	"
Northern Arm River	II	"	"
Peters River	II	"	"
Exploits River			
tributaries below Grand Falls fishway	I	August 9 -17	"
main stem (Exploits Bay to Stoney Brook)	II		
tributaries (Grand Falls fishway- Red Indian Lake Da	III	August 9 -17	"
main stem (Grand Falls fishway- Red Indian Lake Da	IV		
tributaries above Red Indian Lake Dam	IV	August 9 -17	"
main stem above Red Indian Lake Dam	IV		
Rattling Brook	II	August 9 -17	"
Campbellton River	II	August 3 - 17	"
Dog Bay River	II	August 3 - 11	"
Gander River	I		
tributaries: salmon, jonathans, island pond,		August 3 - 17	"
weirs, barry's and bellmans		"	"
tributaries: Northwest & Southwest		August 9 - 17	"
Ragged Harbour River	II	August 3 - 11	"
Anchor Brook	II	"	"
Deadman's Bay River	II	"	"
Windmill Brook	II	"	"

Table 1 cont'd

River	Class	Close dates	Reason for closure
SFA 5 June 15 - September 7			
Northwest Brook (Indian Bay)	II	August 5 - 11	Low water levels & high water temperatures
Indian Bay Brook	II	"	"
Northwest River (Trinity)	II	"	"
Traverse Brook	II	"	"
Middle Brook	II	"	"
Northwest Brook (Alexander Bay)	II	"	"
SFA 6 June 15 - September 7	III		
Salmon Cover River	III	August 5 - 11	Low water levels & high water temperatures
Trouty River	III	"	"
Popes Harbour River	III	"	"
Shoal Harbour River	III	"	"
SFA 7 June 15 - September 7			
SFA 8 June 15 - September 7			
Renews River	III	July 1 - 6	Low water levels & high water temperatures
SFA 9 June 6 - September 7			
Biscay Bay River	II	June 30 - July 3	Low water levels & high water temperatures
Northwest Brook (Trepassey)	II	"	"
Salmonier River	II	"	"
Branch River	II	"	"
Peters River	III	June 30 - July 4	"
Colinet River	IV	June 30 - July 6	"
North Harbour River	III	"	"
Little Salmonier River	II	"	"
Big Barachois River	II	"	"
SFA 10 June 6 - September 7			
Great Barasway River	III	June 30 - July 6	Low water levels & high water temperatures
Southeast River (Placentia)	III	"	"
Northeast River (Placentia)	II	"	"
Pipers Hole River	III	June 30 - July 6, August 9 - 11	"
Come By Chance River	III	June 30 - July 10, August 9 - 11	"
North Harbour River (PB)	III	"	"
Watsons River	III	"	"
Black River	III	"	"
Cape Roger River	III	June 30 - July 10	"
Nonsuch Brook	III	"	"
Bay De L'Eau River	III	"	"
Red Harbour River	III	"	"
West Brook	III	"	"
Tides Brook	III	"	"
Salmonier River (Burin)	III	"	"
Little St. Lawrence River	III	"	"
Lawn River	III	"	"
Taylors Bay River	III	"	"
Salmonier River (Lamaline)	III	"	"
Piercey's Brook	III	"	"
SFA 11 June 6 - September 7			
Grand Bank Brook	III	June 30 - July 10	Low water levels & high water temperatures
Garnish River	III	"	"
Long Harbour River	II	"	"
Conne River	III	June 27 - July 10	In- season review

Table 1 cont'd

	River	Class	Close dates	Reason for closure
SFA 12	**June 6 - September 7**			
SFA 13	**June 1 - September 7**			
	Bear Cove Brook	II	August 3 - 11	Low water levels & high water temperatures
	Little Codroy River	II	"	"
	Grand Codroy River	II	"	"
	Crabbes River	IV	"	"
	Barachois River	IV	"	"
	Robinsons River (retention June 24 - July 9)	III	"	"
	Flat Bay Brook (retention June 24 - July 9)	III	"	"
	Little Barachois Brook	III	"	"
	Southwest & Bottom Brook	III	"	"
	Harry's River	IV	"	"
	Fox Island River	II	"	"
SFA 14A	**June 15 - September 7**			
	Castor River	II	August 16 -21	Low water levels & high water temperatures
	St. Genevieve River	II	"	"
	East Brook (St. Barbe)	III	August 16 -22	"
	Big Brook	III	August 16 -21	"
	Watsons River	III	"	"
	Eastern Brook	III	August 16 -23	"
	Upper River	III	"	"
	Bartletts River	III	"	"
	Parker River (West Brook) Pistolet Bay	III	"	"
	Pinsents Brook	III	"	"
SFA 14B	**June 15 - Sept 15**			

Table 2. Atlantic salmon smolt-to-adult survival (back to the river) for Campbellton River (SFA 4), Northeast Brook, Trepassey, and Rocky River (SFA 9), Conne River (SFA 11), Highlands River (SFA 13), and Western Arm Brook (SFA 14A). Repeat spawners are included in counts. Adjusted smolt counts for Rocky River are bold.

	Campbellton River			Northeast Brook			Rocky River			Conne River[1]			Highlands River			Western Arm Brook		
Year (i)	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i +	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i +	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.	Smolts year i	Sm. sal. year i + 1	% Surv.
1971																5735	406	7.1
1972																11905	797	6.7
1973																8484	506	6.0
1974																11854	639	5.4
1975																9600	552	5.8
1976																6232	373	6.0
1977																9899	315	3.2
1978																13071	1578	12.1
1979																8349	465	5.6
1980													15028	127		15665	492	3.1
1981													15839	100		13981	467	3.3
1982																12477	1141	9.1
1983																10552	235	2.2
1984																20653	467	2.3
1985																13417	527	3.9
1986				1117	91	8.1										17719	437	2.5
1987				1404	97	6.9				74585	7627	10.2				17029	422	2.5
1988				1692	62	3.7				65692	4968	7.6				15321	455	3.0
1989				1708	71	4.2				73724	5368	7.3				11407	444	3.9
1990				1902	99	5.2	8287	211	2.5	56943	2411	4.2				10563	233	2.2
1991				1911	49	2.6	7732	237	3.1	74645	2523	3.4				13453	480	3.6
1992				1674	79	4.7	7813	292	3.7	68208	2703	4.0				15405	947	6.1
1993	31577	2857	9.0	1849	99	5.4	***5115***	158	3.1	55765	1533	2.7	9986	145	1.5	13435	954	7.1
1994	41633	3035	7.3	944	80	8.5	9781	385	3.9	60762	3502	5.8	10503	172	1.6	9283	823	8.9
1995	39715	3208	8.1	792	73	9.2	7577	356	4.7	57733 *	4154	7.2	12160	199	1.6	15144	1230	8.1
1996	58369	1975	3.4	1749	50	2.9	***14261***	435	3.1	94088	3200	3.4	12383	398	3.2	14502	509	3.5
1997	62050	3275	5.3	1829	91	5.0	***16900***	423	2.5	100983	2931	2.9	6776	96	1.4	23845	1718	7.2
1998	50441	3076	6.1	1727	95	5.5	***12163***	327	2.7	69841	2358	3.4	5922	146	2.5	17139	1046	6.1
1999	47256	1798	3.8	1419	83	5.8	***8625***	277	3.2	63658	5177	8.1	9634	58	0.6	13500	1492	11.1
2000	35596			1740			7616			60777			13120			12706		

[1]Includes Native food fishery.

* 57733 excludes 5016 removed to Roti Bay.

4154 small salmon for Conne River 1996 excludes 286 fish from the wild smolt aquaculture experiment.

Table 3. Counts of small salmon from fishways and counting fences in insular Newfoundland 1974-2000 by Salmon Fishing Area (SFA). Also shown are means, coefficients of variation, 95% confidence limits (LCL and UCL), and percentage change for 2000 in relation to 1999, and the 1984-1989, 1986-1991, and 1992-1999 means. Partial counts are in parentheses and are not included in statistical calculations. Adusted counts are bold.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1974		2538		857			(770)		162				223						41	38	382
1975		9218					(1119)		778				(186)						1	191	631
1976		3991							335				294						132	341	520
1977		6148							371										192	789	362
1978		3790		755			1403	810	436				390						117	971	293
1979		6715		(404)			(1350)	569	455				454						195	1984	1578
1980				997			1712	843	420				433			82			301	792	435
1981		8114		2459			2414	1115	619				334			127			110	2101	451
1982		7605		1425			1281	963	625				86			100			275	2112	394
1983				978			1195	1210	853				233						220	2007	1141
1984		17219		1081			1379	1233	904		89		419						440	1805	120
1985		16652		1663			904	1557	960		124		384						190	1553	**416**
1986		9697		1064			1036	1051	726		158		725		7515				354	2815	**525**
1987		9014		493			914	974	570		91	80	325	64	9687				355	2505	378
1988		8974		1562			772	1737	795		97	313	543	65	7118				437	2075	**251**
1989		7192		596	7743		496	1138	668		62	168	706	102	4469					1369	**455**
1990		6629		345	7520		745	1149	(410)		71	401	551	158	4321			12216		2296	**444**
1991		5245		245	6445		562	873	(311)		99	211	353	55	2086			5724		1441	233
1992		12538		1168	**18179**		1182	1443	886		49	237	921	104	1973		222	17571	435	2347	480
1993		21319	4001	1560	25905		1959	(2713)	962		79	292	847	169	2355	137	576	18477	526	4009	947
1994		16168	2857	968	18080		1513	1571	1179		99	158	677	73	1533	145	562	7995	701	3592	954
1995		15691	3035	1600	22002		1139	2258	1298	442	80	385	663	118	3498	172	753	27898	1003	5800	823
1996	579	29726	3208	946	23665		1751	2005	1285	593	73	356	1225	674	4436	199	601	30445	601	6923	1230
1997	(338)	13552	1975	465	10476	1375	1221	1577	979	(408)	50	435	641	399	2678	398	613	14866	783	3659	509
1998	(351)	26333	3275	1295	18742	2636	2405	1780	1332	540	91	423	756	264	2931	96	593	13016	542	4999	1718
1999	(432)	28252	3076	1105	18461	2219	1802	1836	1198	314	95	327	336	307	2357	146	608	27585	829	4008	1046
2000	-	11817	1798	742	-	-	1660	-	833	272	83	277	520	-	4708	58	441	-	658	3763	1486
$\bar{X}$ 1984-89		11458		1077			917	1282	771		104	187	517	77	7197				355	2020	358
CV		38		45			32	24	19		32	63	33	28	30				29	28	41
95% UCL		16000		1580			1223	1598	924		138	479	695	131	10603				481	2606	513
95% LCL		6916		573			610	965	617		69	-105	339	23	3791				229	1434	202
N		6		6			6	6	6		6	3	6	3	4				5	6	6
$\bar{X}$ 1986-91		7792		718	7236		754	1154	690		96	235	534	89	5866				382	2084	381
CV		22		70	10		27	26	14		35	53	32	48	47				12	28	31
95% UCL		9593		1244	8960		969	1473	841		132	390	711	142	8741				500	2692	504
95% LCL		5991		191	5512		540	835	538		61	79	356	36	2991				264	1475	258
N		6		6	3		6	6	4		6	5	6	5	6				3	6	6
$\bar{X}$ 1992-99		20447	3061	1138	19439		1622	1898	1140	472	77	327	758	264	2720	185	566	19732	678	4417	963
CV		34	20	32	24		27	22	15	26	25	29	34	76	34	54	27	41	28	32	41
95% UCL		26218	3618	1444	23328		1992	2250	1285	667	93	406	973	431	3483	276	692	26480	834	5617	1296
95% LCL		14676	2504	832	15549		1251	1546	995	277	61	247	544	96	1957	93	440	12984	521	3218	631
N		8	7	8	8		8	8	8	4	8	8	8	8	8	7	8	8	8	8	8
% change 2000 vs.																					
1999		-58	-42	-33			-8		-30	-13	-13	-15	55		100	-60	-27		-21	-6	42
1984-89 mean		3		-31			81		8		-20	48	1		-35				85	86	316
1986-91 mean		52		3			120		21		-14	18	-3		-20				72	81	290
1992-99 mean		-42	-41	-35			2		-27	-42	8	-15	-31		73	-69	-22		-3	-15	54

1. Main River (Sop's Arm)
2. Exploits River (Bishop's Falls)
3. Campbellton River
4. Salmon Brook (Gander River)
5. Gander River
6. Indian Bay Brook
7. Middle Brook
8. Terra Nova River (Lower)
9. Terra Nova River (Upper)
10. Northwest River, Port Blandford
11. Northeast Brook, Trepassey
12. Rocky River
13. Northeast River, Placentia
14. Little River
15. Conne River
16. Highlands River
17. Pinchgut Brook
18. Humber River
19. Lomond River
20. Torrent River
21. Western Arm Brook

Table 4. Counts of large salmon from fishways and counting fences in insular Newfoundland 1974-2000 by Salmon Fishing Area (SFA). Also shown are means, coefficients of variation, 95% confidence limits (LCL and UCL), and percentage change for 2000 in relation to 1999, and the 1984-1889, 1986-1991, and 1992-1999 means. Partial counts are in parentheses and are not included in statistical calculations. Adusted counts are bold.

	SFA 3	SFA 4				SFA 5					SFA 9		SFA 10	SFA 11		SFA 13			SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1974		411		9			(77)		121				9						33	3	4
1975		1439					(9)		52				(36)						0	25	1
1976		460							37				56						11	47	0
1977		581							262										11	33	3
1978		303		52			16	20	89				32						12	21	1
1979		277		(6)			(54)	170	30				37						1	39	0
1980				15			91	39	17				34			55			19	63	3
1981		(1695)		33			39	90	28				62			29			50	97	1
1982		(181)		18			20	19	8				36			56			16	523	3
1983				12			75	57	76				22						7	442	4
1984		529		38			57	107	98		33		44						47	288	0
1985		183		26			27	112	60		41		0						14	30	1
1986		355		12			15	140	58		30		39		397				32	92	0
1987		310		9			19	56	38		30	1	16	3	498				11	68	1
1988		147		24			14	206	45		19	6	11	3	418				21	44	1
1989		89		24	473		19	142	51		18	9	15	5	319					60	0
1990		122		8	508		13	144	(34)		9	17	25	15	361			855		82	0
1991		99		2	670		14	114	(26)		13	16	8	6	87			401		71	1
1992		314		101	4162		43	270	224		10	46	46	21	154		5	2945	80	169	8
1993		627	145	87	1734		87	(470)	173		17	72	65	11	98	78	43	636	34	222	8
1994		916	191	83	1072		90	242	172		15	19	70	11	100	148	47	1030	50	331	31
1995		941	218	125	1121		168	634	260	135	12	39	74	17	107	120	28	2064	95	611	33
1996	49	2053	560	112	1753		161	464	185	203	15	45	123	127	179	142	38	2679	93	507	50
1997	(65)	886	321	119	1883	352	262	527	173	(115)	9	89	185	79	182	157	68	2595	72	666	55
1998	(31)	1953	402	141	3649	336	196	390	143	104	11	130	287	49	294	117	63	4865	126	757	128
1999	(34)	2235	493	138	4815	365	130	343	76	93	18	77	167	49	241	82	63	4433	113	399	22
2000	-	683	208	61	-	-	189	-	90	106	14	104	258	-	216	67	15	-	81	587	120
$\bar{X}$ 1984-89		269		22			25	127	58		29	5	21	4	408				25	97	1
CV		60		47			65	39	36		31	76	82	31	18				59	99	110
95% UCL		439		33			42	179	80		38	15	39	7	525				43	198	1
95% LCL		99		11			8	75	36		19	-5	3	1	291				7	-4	-0
N		6		6			6	6	6		6	3	6	3	4				5	6	6
$\bar{X}$ 1986-91		187		13	550		16	134	48		20	10	19	6	347				21	70	1
CV		62		68	19		17	36	18		44	69	60	78	41				49	24	110
95% UCL		308		23	811		18	185	62		29	18	31	13	494				47	87	1
95% LCL		66		4	289		13	83	34		11	1	7	0	199				-5	52	-0
N		6		6	3		6	6	4		6	5	6	5	6				3	6	6
$\bar{X}$ 1992-99		1241	333	113	2524		142	418	176	134	13	65	127	46	169	121	44	2656	83	458	42
CV		59	48	19	58		49	32	31	37	25	54	64	89	42	26	48	55	37	47	93
95% UCL		1850	479	131	3744		200	528	221	212	16	94	196	80	228	149	62	3888	109	636	74
95% LCL		632	186	95	1304		84	307	130	55	11	35	59	11	110	92	27	1424	57	280	9
N		8	7	8	8		8	8	8	4	8	8	8	8	8	7	8	8	8	8	8
% change 2000 vs.																					
1999		-69	-58	-56			45		18	14	-22	35	54		-10	-18	-76		-28	47	445
1984-89 mean		154		175			651		54		-51	1850	1138		-47				224	505	23900
1986-91 mean		265		363			1106		88		-29	961	1258		-38				280	745	23900
1992-99 mean		-45	-38	-46			33		-49	-21	5	61	103		28	-44	-66		-2	28	187

1. Main River (Sop's Arm)
2. Exploits River (Bishop's Falls)
3. Campbellton River
4. Salmon Brook (Gander River)
5. Gander River
6. Indian Bay Brook
7. Middle Brook
8. Terra Nova River (Lower)
9. Terra Nova River (Upper)
10. Northwest River, Port Blandford
11. Northeast Brook, Trepassey
12. Rocky River
13. Northeast River, Placentia
14. Little River
15. Conne River
16. Highlands River
17. Pinchgut Brook
18. Humber River
19. Lomond River
20. Torrent River
21. Western Arm Brook

Table 5. Total returns of small salmon to rivers in insular Newfoundland 1984-2000 by Salmon Fishing Area (SFA). Also shown are means and standard deviations for 1984-89, 1986-91, and 1992-99.

	SFA 4			SFA 5		SFA 9		SFA 10	SFA 11		SFA 13		SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1984	19028			1675		89		459					986	1805	235
1985	17555			1283		124		519					393	1623	467
1986	10343			1547		158		879		8302			725	3155	527
1987	9481			1053		91	80	350	64	10155			652	2670	437
1988	9496			1337		97	313	637	65	7627			841	2388	422
1989	7577		7743	626		62	168	809	102	4968			652	1512	455
1990	6995		7740	1070		71	401	699	158	5368			777	2518	444
1991	5659		6745	763		99	211	368	55	2411			731	1591	233
1992	13508		18179	1563		49	237	956	104	2523		222	794	2832	480
1993	22253	4001	26205	2247		79	292	980	169	2703	137	576	816	4215	947
1994	17603	2857	18273	1844		99	158	710	73	1533	145	563	1038	3827	954
1995	16226	3035	22266	1448	498	80	385	774	118	3502	172	752	1365	6168	823
1996	30425	3208	23946	2112	593	73	356	1420	674	4440	199	601	982	7371	1230
1997	15263	1975	10599	1287	465	50	435	723	399	3200	398	613	1300	4033	509
1998	27093	3275	18805	2549	540	91	423	885	264	2931	96	593	766	5329	1718
1999	28802	3076	18491	1950	314	95	327	363	307	2358	146	608	1179	4545	1046
2000	12152	1798	14041	1738	272	83	277	571	-	5177	58	441	927	4105	1492
$\bar{X}$ 1984-89	12247			1254		104	187	609	77	7763			708	2192	424
SD	4792			376		33	118	206	22	2148			200	653	99
$\bar{X}$ 1986-91	8259		7409	1066		96	235	624	89	6472			730	2306	420
SD	1799		575	344		34	125	222	43	2765			73	640	99
$\bar{X}$ 1992-99	21397	3061	19596	1875	482	77	327	851	264	2899	185	566	1030	4790	963
SD	6660	602	4725	428	105	19	95	301	200	859	99	151	233	1443	398

1. Exploits River (Bishop's Falls)
2. Campbellton River
3. Gander River
4. Middle Brook
5. Northwest River, Port Blandford
6. Northeast Brook, Trepassey
7. Rocky River
8. Northeast River, Placentia
9. Little River
10. Conne River
11. Highlands River
12. Pinchgut Brook
13. Lomond River
14. Torrent River
15. Western Arm Brook

Table 6. Total returns of large salmon to rivers in insular Newfoundland 1984-2000 by Salmon Fishing Area (SFA). Also shown are means and standard deviations for 1984-89, 1986-91, and 1992-99.

	SFA 4			SFA 5		SFA 9		SFA 10	SFA 11		SFA 13		SFA 14A		
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1984	529			57		33		44					75	288	0
1985	183			27		41		0					14	30	1
1986	355			15		30		39		412			37	93	0
1987	310			19		30	1	16	3	516			12	68	1
1988	147			14		19	6	11	3	420			24	44	1
1989	89		473	19		18	9	15	5	320			22	60	0
1990	122		508	13		9	17	25	15	372			19	82	0
1991	99		670	14		13	16	8	6	89			21	71	1
1992	314		4162	43		10	46	46	21	159		5	86	170	8
1993	627	145	1734	88		17	72	65	11	100	78	43	38	224	8
1994	917	191	1072	90		15	19	70	11	100	148	47	56	332	31
1995	945	218	1121	168	135	12	39	74	17	110	120	28	101	615	33
1996	2057	560	1753	161	203	15	45	123	127	179	142	38	98	509	50
1997	881	321	1883	262	183	9	89	185	79	185	157	68	77	674	55
1998	1959	402	3649	196	104	11	130	287	49	295	117	63	128	766	128
1999	2236	493	4822	130	93	18	77	167	49	241	82	63	123	416	22
2000	683	208	2034	189	106	14	104	258	-	216	67	15	82	593	120
$\bar{X}$ 1984-89	269			25		29	5	21	4	417			31	97	1
SD	162			16		9	4	17	1	80			23	96	1
$\bar{X}$ 1986-91	187		550	16		20	10	19	6	355			23	70	1
SD	115		105	3		9	7	11	5	145			8	17	1
$\bar{X}$ 1992-99	1242	333	2525	142	144	13	65	127	46	171	121	44	88	463	42
SD	730	159	1461	70	48	3	35	82	41	70	31	21	31	215	39

1. Exploits River (Bishop's Falls)
2. Campbellton River
3. Gander River
4. Middle Brook
5. Northwest River, Port Blandford
6. Northeast Brook, Trepassey
7. Rocky River
8. Northeast River, Placentia
9. Little River
10. Conne River
11. Highlands River
12. Pinchgut Brook
13. Lomond River
14. Torrent River
15. Western Arm Brook

Table 7. Percentage change in total returns of small salmon in 2000 in relation to 1999, the 1984-1989, 1986-1991 and 1992-1999 means.

Counting Facility	Total Returns Small Salmon 2000	Percent Change from 1999	1984-89 mean	1986-91 mean	1992-99 mean
SFA 4					
Exploits River	12152	-58	-1	47	-43
Campbellton River	1798	-42			-41
Gander River	14041	-24		90	-28
SFA 5					
Middle Brook	1738	-11	39	63	-7
Northwest River (TNNP)	272	-13			-44
SFA 9					
Northeast Bk. (Trep.)	83	-13	-20	-14	8
Rocky River	277	-15		18	-15
SFA 10					
Northeast River (Plac.)	571	57	-6	-8	-33
SFA 11					
Conne River	5177	120		-20	79
SFA 13					
Highlands River	58	-60			-69
Pinchgut Brook	441	-27			-22
SFA 14A					
Lomond River	927	-21	31	27	-10
Torrent River	4105	-10	87	78	-14
Western Arm Brook	1492	43	252	256	55

Table 8. Percentage change in total returns of large salmon in 2000 in relation to 1999, the 1984-1989, 1986-1991 and 1992-1999 means.

Counting Facility	Total Returns Large Salmon 2000	Percent Change from 1999	1984-89 mean	1986-91 mean	1992-99 mean
SFA 4					
Exploits River	683	-69	154	265	-45
Campbellton River	208	-58			-38
Gander River	2034	-58		270	-19
SFA 5					
Middle Brook	189	45	651	1106	33
Northwest River (TNNP)	106	14			-26
SFA 9					
Northeast Bk. (Trep.)	14	-22	-51	-29	5
Rocky River	104	35		961	61
SFA 10					
Northeast River (Plac.)	258	54	1138	1258	103
SFA 11					
Conne River	216	-10		-39	26
SFA 13					
Highlands River	67	-18			-44
Pinchgut Brook	15	-76			-66
SFA 14A					
Lomond River	82	-33	167	264	-7
Torrent River	593	43	510	751	28
Western Arm Brook	120	445	17900	23900	187

Table 9. Proportions of large salmon in total returns to rivers in insular Newfoundland during 1992-2000 and mean proportions for 1984-89, 1986-91, and 1992-99.

	Proportion of large salmon											
River Name	1992	1993	1994	1995	1996	1997	1998	1999	2000	84-89 mean	86-91 mean	92-99 mean
SFA 4												
Explotis River (Bishop's Falls)	0.023	0.027	0.049	0.055	0.063	0.055	0.067	0.072	0.053	0.021	0.022	0.055
Campbellton River	-	0.035	0.063	0.067	0.149	0.140	0.109	0.138	0.104	-	-	0.098
Gander River	0.186	0.062	0.055	0.048	0.068	0.151	0.163	0.207	0.127	-	0.069	0.114
SFA 5												
Middle Brook	0.027	0.038	0.047	0.104	0.071	0.169	0.071	0.063	0.098	0.020	0.014	0.071
Northwest River (Port Blandford)	-	-	-	0.213	0.255	0.282	0.161	0.229	0.280	-	-	0.230
SFA 9												
Northeast Brook (Trepassey)	0.169	0.177	0.132	0.130	0.170	0.153	0.108	0.159	0.144	0.216	0.171	0.148
Rocky River	0.163	0.198	0.107	0.092	0.112	0.170	0.235	0.191	0.273	-	0.040	0.165
SFA 10												
Northeast River (Placentia)	0.046	0.062	0.090	0.087	0.080	0.204	0.245	0.315	0.311	0.033	0.030	0.130
SFA 11												
Conne River	0.059	0.036	0.061	0.030	0.039	0.055	0.091	0.093	0.040	-	0.052	0.056
SFA 13												
Highlands River	-	0.363	0.505	0.411	0.416	0.283	0.549	0.360	0.536	-	-	0.395
Pinchgut Brook	0.022	0.069	0.077	0.036	0.059	0.100	0.096	0.094	0.033	-	-	0.073
SFA 14A												
Lomond River	0.098	0.044	0.051	0.069	0.091	0.056	0.143	0.094	0.081	0.042	0.030	0.079
Torrent River	0.057	0.050	0.080	0.091	0.065	0.143	0.126	0.084	0.126	0.042	0.029	0.088
Western Arm Brook	0.016	0.008	0.031	0.039	0.039	0.098	0.069	0.021	0.074	0.002	0.001	0.042

Table 10. Newfoundland Region summary of the conservation egg requirement attained for various rivers for years prior to the commercial salmon fishing moratorium (1984-91) and the eight years during the moratorium (1992-2000). Also shown are the means for 1984-91 and 1992-2000.

SFA	River	Percentage conservation level met																	% Conservation met 1984-1991	% Conservation met 1992-2000
		1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000		
4	Exploits River	39	37	32	33	37	36	26	16	31	43	31	39	69	24	48	47	22	32.0	39.3
	Lower	123	100	66	62	59	46	45	34	101	157	103	121	210	72	146	134	64	66.9	123.1
	Middle	20	17	8	9	12	14	12	16	20	23	18	24	43	15	35	35	16	13.5	25.4
	Upper	29	53	72	97	125	119	88	0	2	6	7	12	26	10	6	7	2	72.9	8.7
	Campbellton River										311	239	277	329	187	311	326	157	-	267.1
	Gander River						44	38	36	118	128	91	95	124	62	110	119	87	39.3	103.8
5	Indian Bay Brook														113	183	161	-	-	152.3
	Middle Brook	131	84	89	90	55	49	74	51	148	238	174	114	250	196	301	222	218	77.9	206.8
	Terra Nova River	18	23	17	14	28	19	19	15	28	53	26	45	36	32	32	34	-	19.1	31.8
	Northwest Brook												37	55	46	42	28	27	-	39.2
9	Biscay Bay River	156	126	230	119	117	87	122	38	141	97	143	77	117	-	-	-	-	124.4	115.0
	Northeast Brook (Trepassey)	229	312	368	227	213	173	156	249	126	193	239	194	196	135	256	248	216	240.9	200.3
	Rocky River	64	29	59	22	30	17	40	22	28	34	25	56	34	56	54	39	34	35.4	40.0
10	Northeast River (Placentia)	204	152	352	166	247	302	269	175	555	527	434	422	736	486	484	260	455	233.4	484.3
11	Conne River - Conservation			262	394	285	185	201	93	87	110	72	147	204	125	150	122	210	236.7	136.3
	Management			146	219	159	103	112	51	48	61	40	82	114	70	84	68	117	131.7	76.0
13	Highlands River										46	77	67	79	105	59	49	34	-	64.5
	Crabbes River									34	13	41		68	95	44	65	63	-	52.9
	Middle Barachois Brook									53	48	74		52	95		44	95	-	65.9
	Robinsons River									57	23	65		67	91		117	135	-	79.3
	Fischells River									14	24	71			44	23	110	142	-	61.1
	Flat Bay Brook									18	14	19	45	85	89		149	167	-	73.3
	Harry's River									12	37	46	48	52	50	49	49	29	-	41.3
	Humber River							60	27	117	96	40	128	186	115	120	201	-	43.5	111.4
14A	Lomond River	74	31	59	56	70	61	62	64	121	118	142	187	143	161	151	181	140	59.6	149.3
	Torrent River	270	161	360	199	266	225	221	178	313	538	530	1033	1279	797	924	680	657	235.0	750.1
	Western Arm Brook	30	80	156	103	67	142	157	68	151	288	292	286	415	200	625	370	480	100.4	345.2

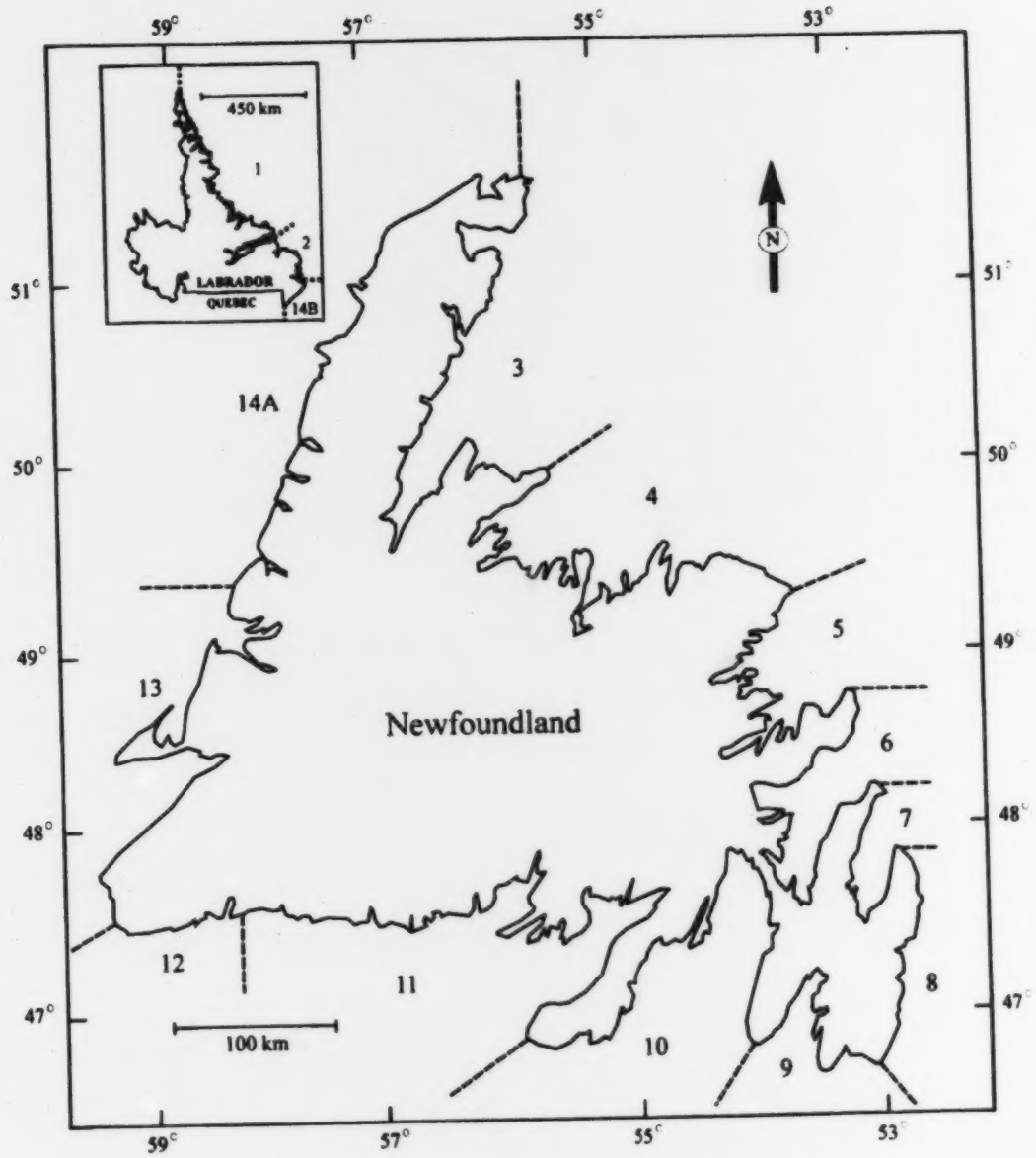

Fig. 1. Map showing the 14 Salmon Fishing Areas of the Newfoundland Region.

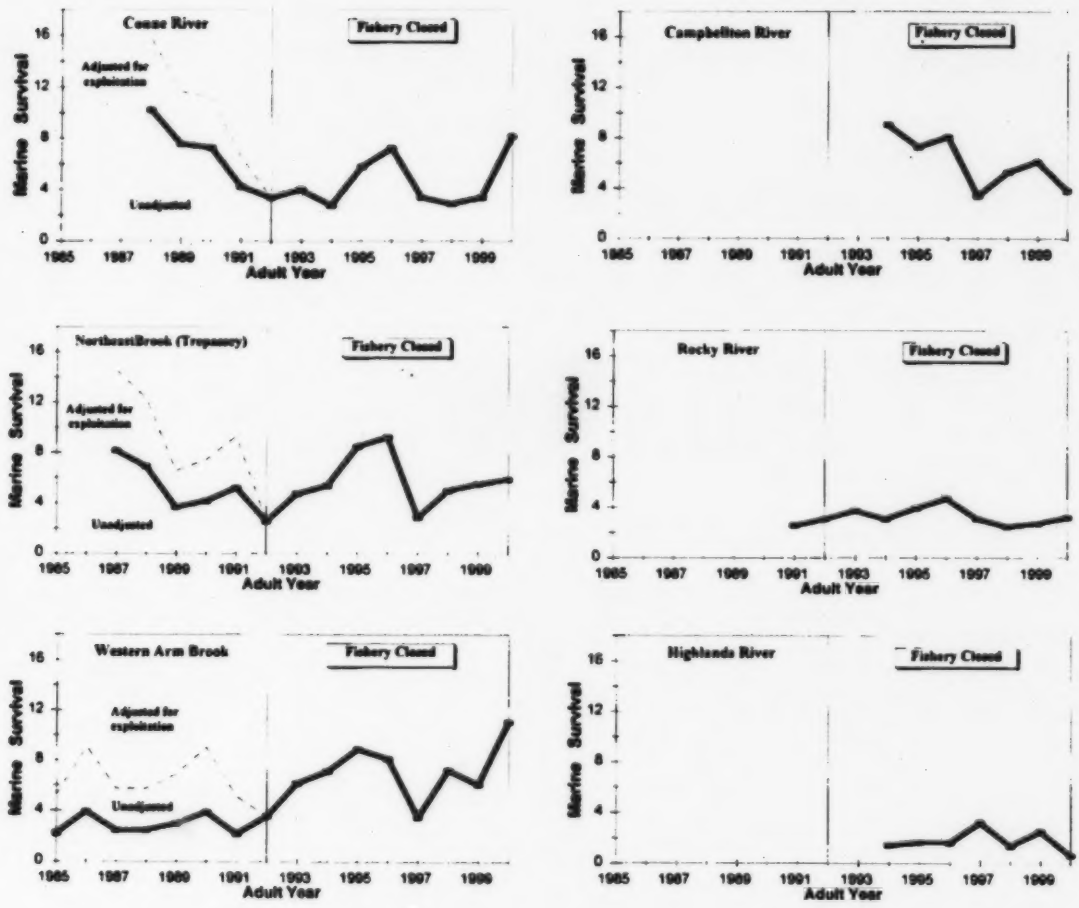

Fig. 2. Estimates of marine survival from smolts in year i to adult small salmon in year i+1. Dashed line represents marine survival adjusted for average marine exploitation rate (from Dempson *et al.* MS 1998).

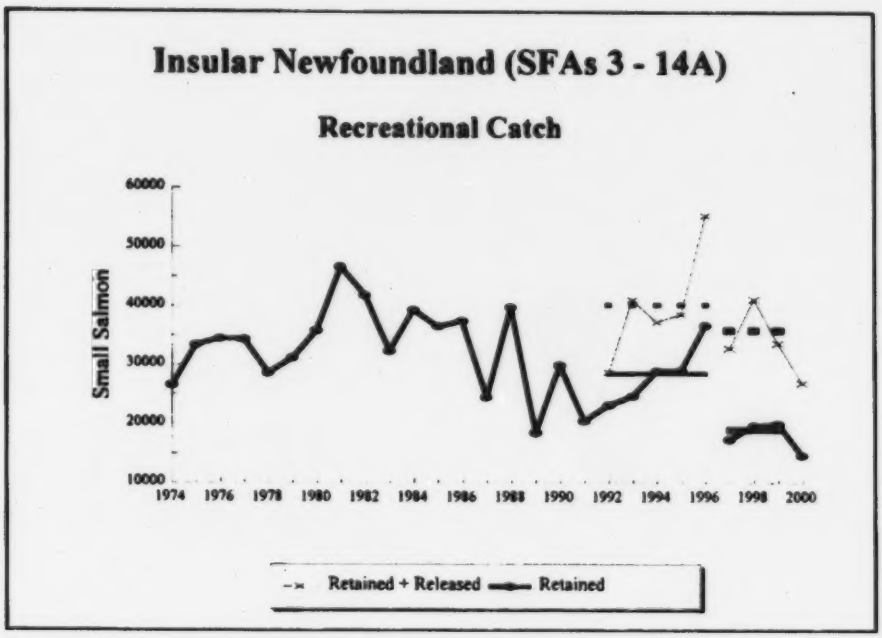

Fig. 3. Recreational catch of small salmon (retained, 1974-2000; retained plus released, 1992-2000), for Insular Newfoundland (SFAs 3-14A). The thin solid horizontal line represents the 1992-96 mean (retained), the thin broken horizontal line the 1992-96 mean (retained + released), the thick solid line the 1997-99 mean (retained) and the thick broken line the 1997-99 mean (retained + released). For some rivers in SFAs 12 & 13, 1996, where DFO data were unavailable, license stub return data were used. The 1997-2000 catch data, obtained from the license stub return, are represented by a non-continuous line.

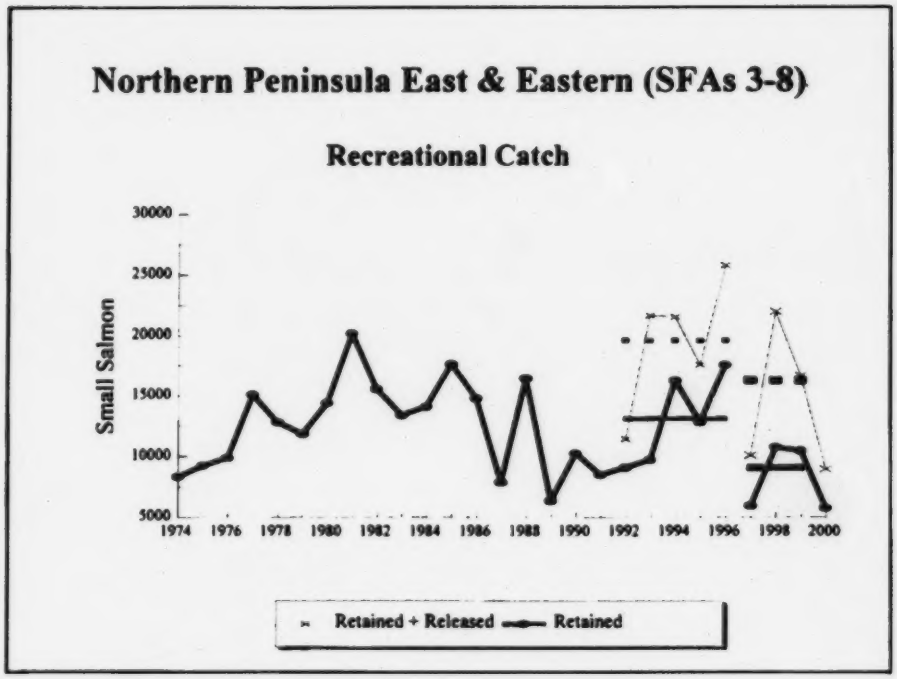

Fig. 4. Recreational catch of small salmon (retained, 1974-2000; retained plus released, 1992-2000), for Northern Peninsula East & Eastern (SFAs 3-8). The thin solid horizontal line represents the 1992-96 mean (retained), the thin broken horizontal line the 1992-96 mean (retained + released), the thick solid line the 1997-99 mean (retained) and the thick broken line the 1997-99 mean (retained + released). The 1997-2000 catch data, obtained from the license stub return, are represented by a non-continuous line.

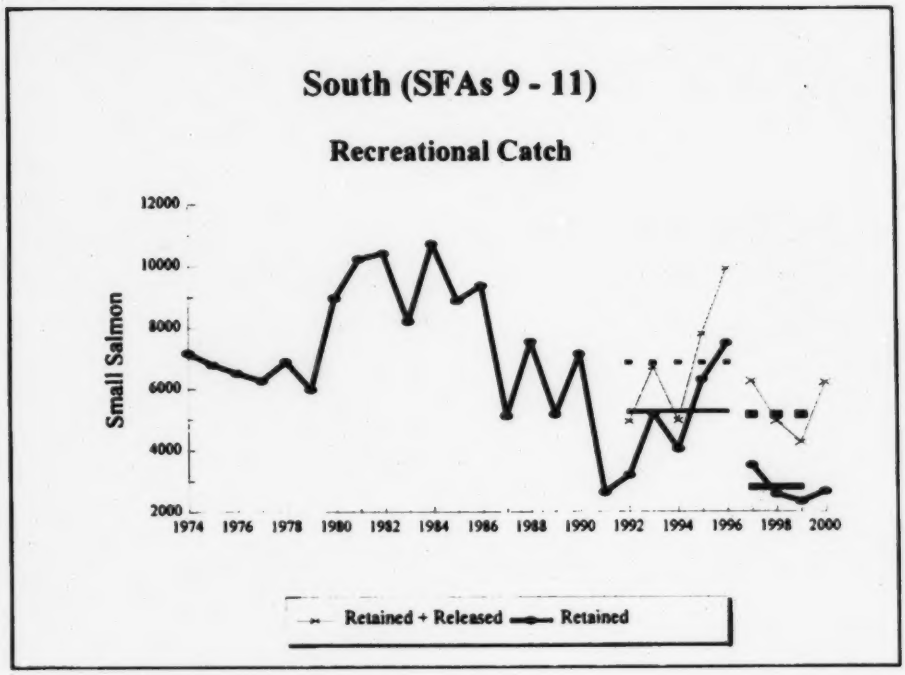

Fig. 5. Recreational catch of small salmon (retained, 1974-2000; retained plus released, 1992-2000), for South (SFAs 9-11). The thin solid horizontal line represents the 1992-96 mean (retained), the thin broken horizontal line the 1992-96 mean (retained + released), the thick solid line the 1997-99 mean (retained) and the thick broken line the 1997-99 mean (retained + released). The 1997-2000 catch data, obtained from the license stub return, are represented by a non-continuous line.

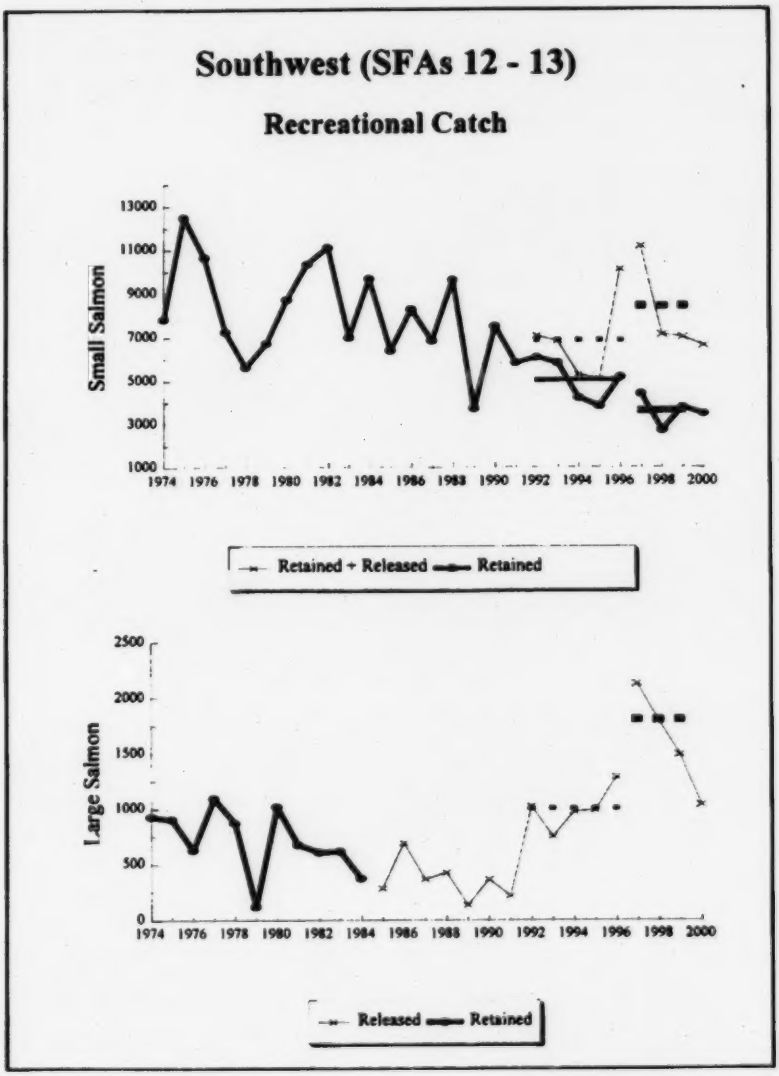

Fig. 6. Recreational catch of small salmon (retained, 1974-2000; retained plus released, 1992-2000), for Southwest (SFAs 12 - 13). The catch of large salmon prior to 1985 is retained and for 1985-2000 is released. The thin solid horizontal line represents the 1992-96 mean (retained), the thin broken horizontal line the 1992-96 mean (retained + released), the thick solid line the 1997-99 mean (retained) and the thick broken line the 1997-99 mean (retained + released). The 1997-2000 catch data, obtained from the licnese stub return, are represented by a non-continuous line.

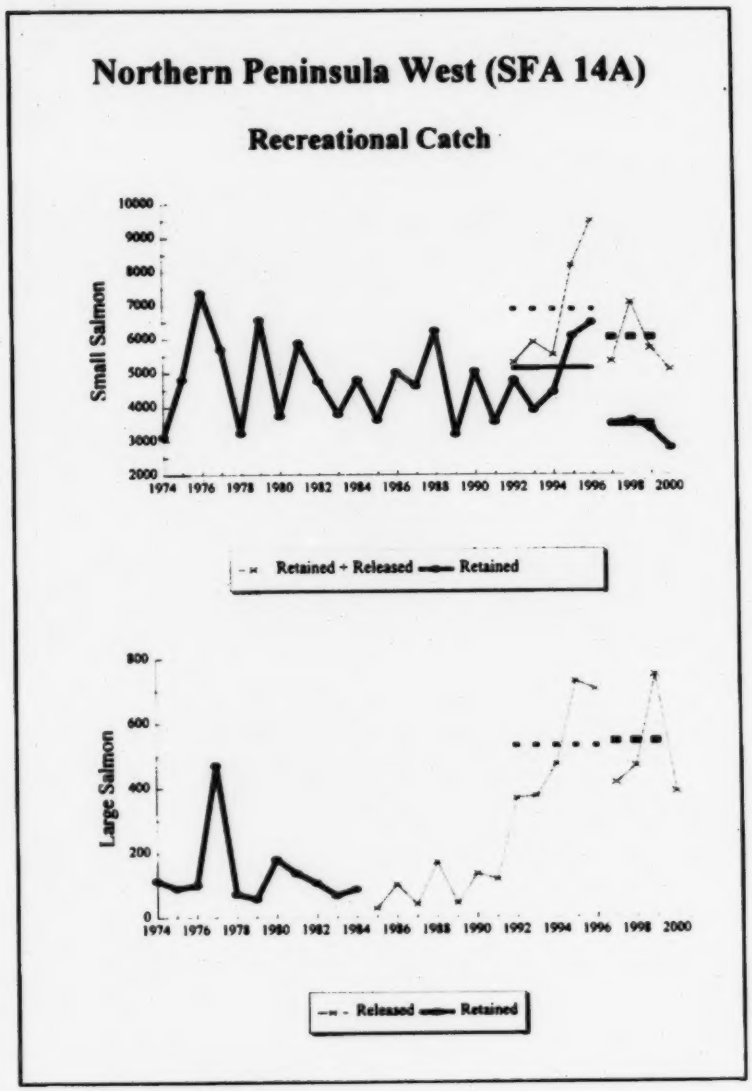

Fig. 7. Recreational catch of small salmon (retained, 1974-2000; retained plus released, 1992-2000), for Northern Peninsula West (SFA 14A). The catch of large salmon prior to 1985 is retained and for 1985-2000 is released. The thin solid horizontal line represents the 1992-96 mean (retained), the thin broken horizontal line the 1992-96 mean (retained + released), the thick solid line the 1997-99 mean (retained) and the thick broken line the 1997-99 mean (retained + released). The 1997-2000 catch data, obtained from the license stub return, are represented by a non-continuous line.

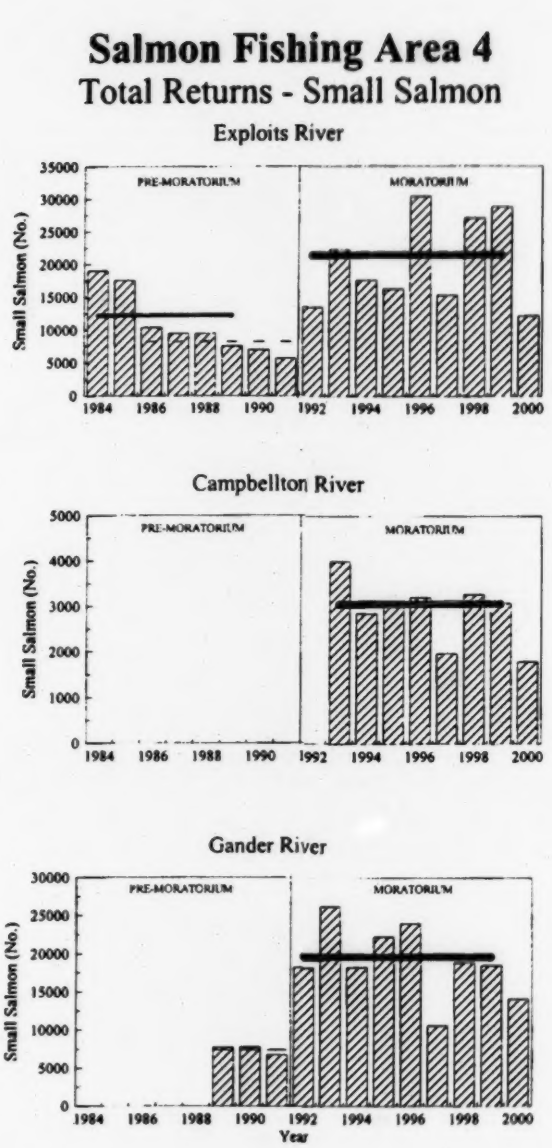

Fig. 8. Total returns of small salmon to Exploits River, Campbellton River and Gander River (SFA 4), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

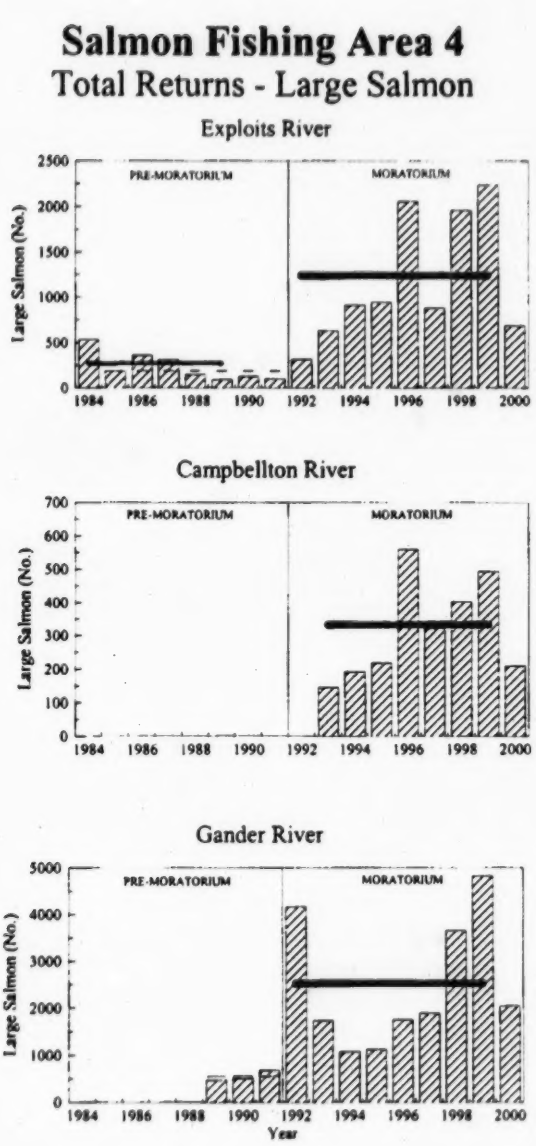

Fig. 9. Total returns of large salmon to Exploits River, Campbellton River and Gander River (SFA 4), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

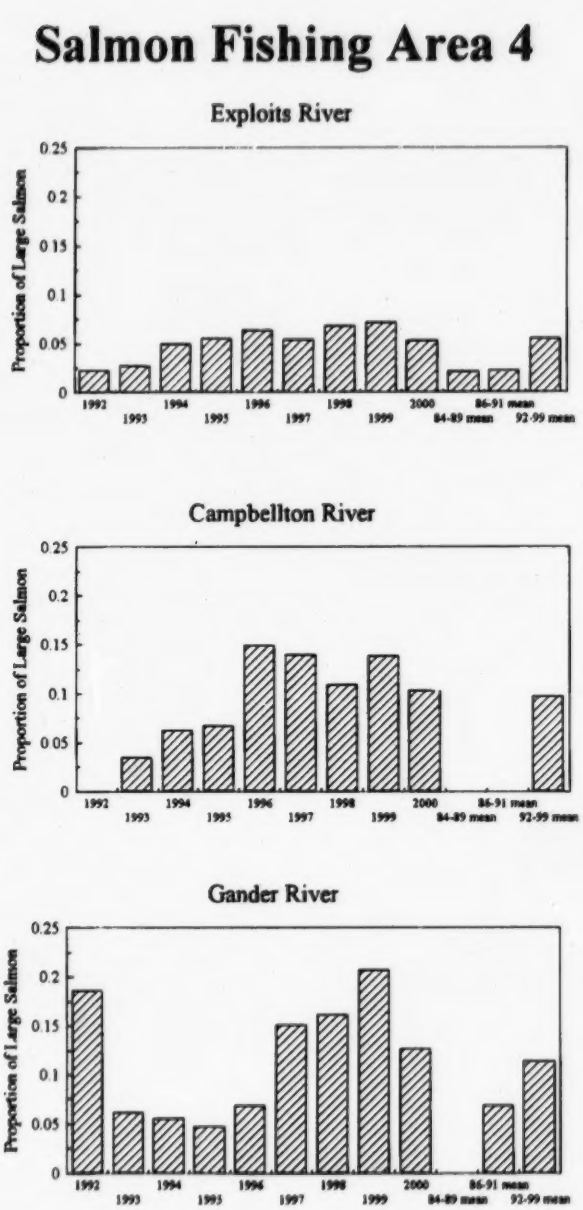

Fig. 10. Proportion of large salmon in total returns to Exploits River , Campbellton River and Gander River, SFA 4, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

Salmon Fishing Area 5

Total Returns - Small Salmon

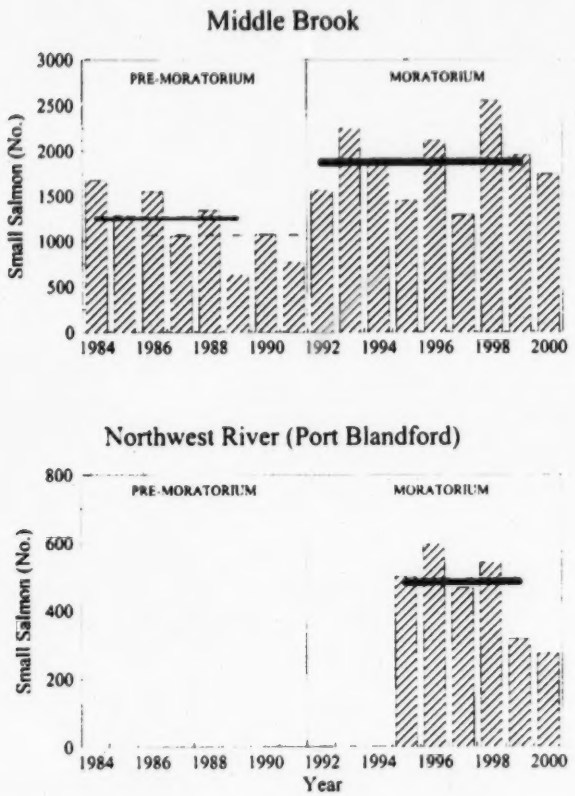

Fig. 11. Total returns of small salmon to Middle Brook and Northwest River, Port Blandford (SFA 5), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 5

Total Returns - Large Salmon

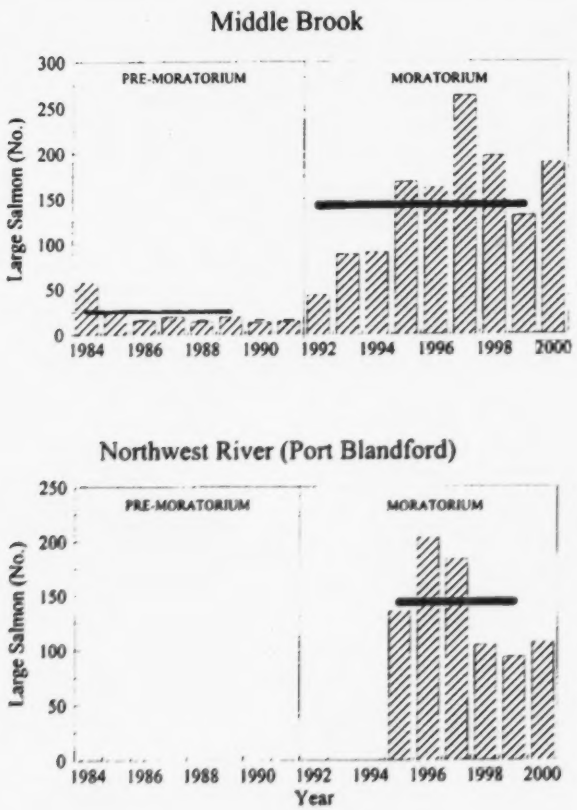

Fig. 12. Total returns of large salmon to Middle Brook and Northwest River, Port Blandford (SFA 5), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

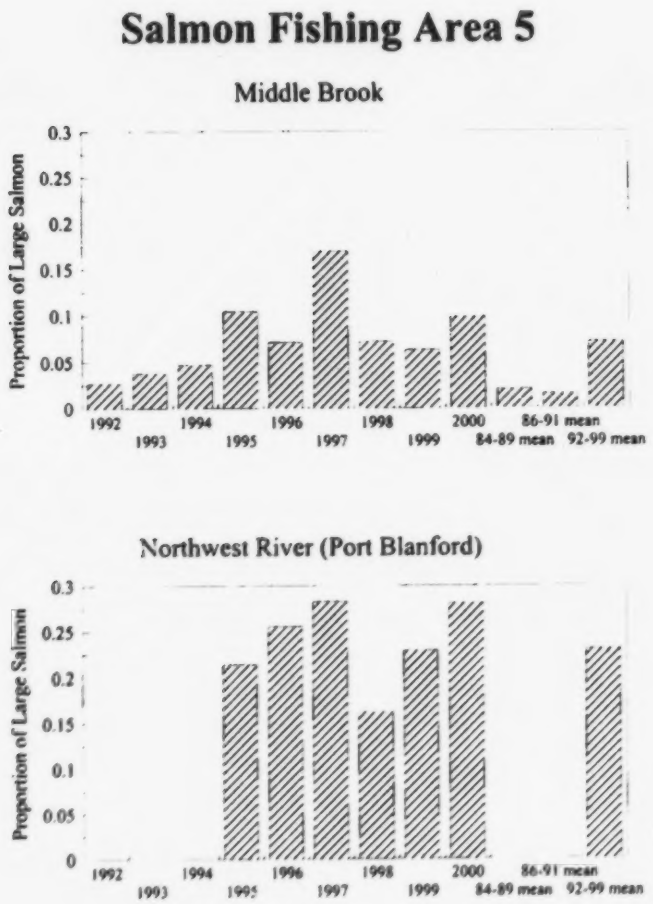

Fig. 13. Proportion of large salmon in total returns to Middle Brook and Northwest River (Port Blandford), SFA 5, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

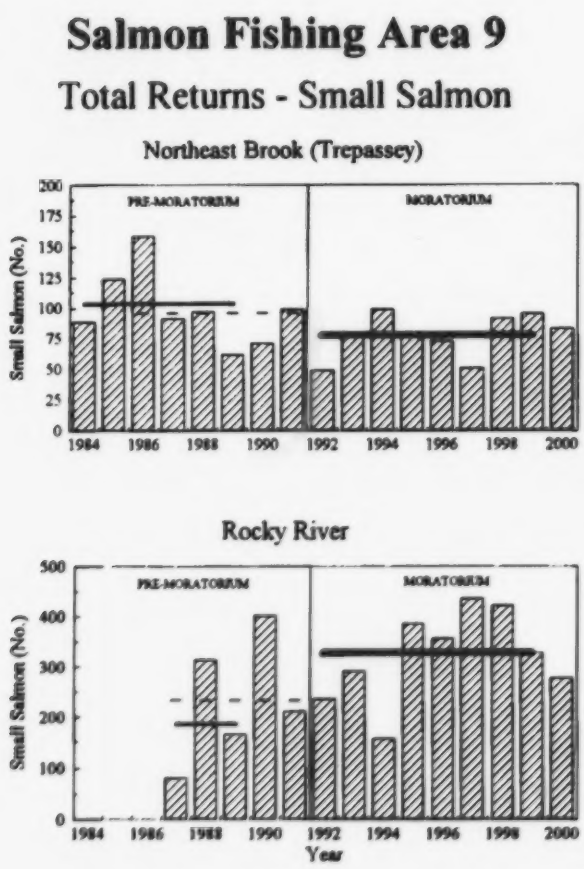

Fig. 14. Total returns of small salmon to Northeast Brook (Trepassey) and Rocky River (SFA 9), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

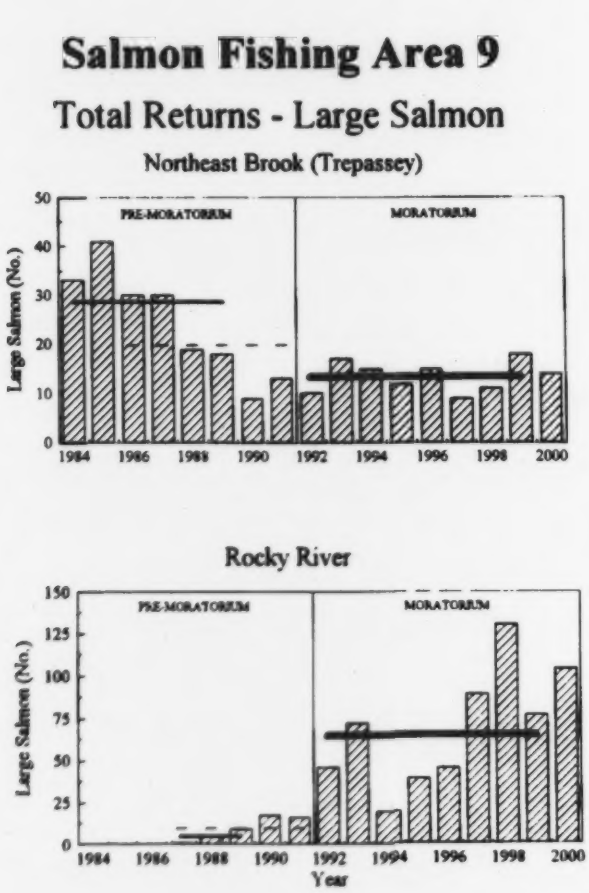

Fig. 15. Total returns of large salmon to Northeast Brook (Trepassey) and Rocky River (SFA 9), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 9

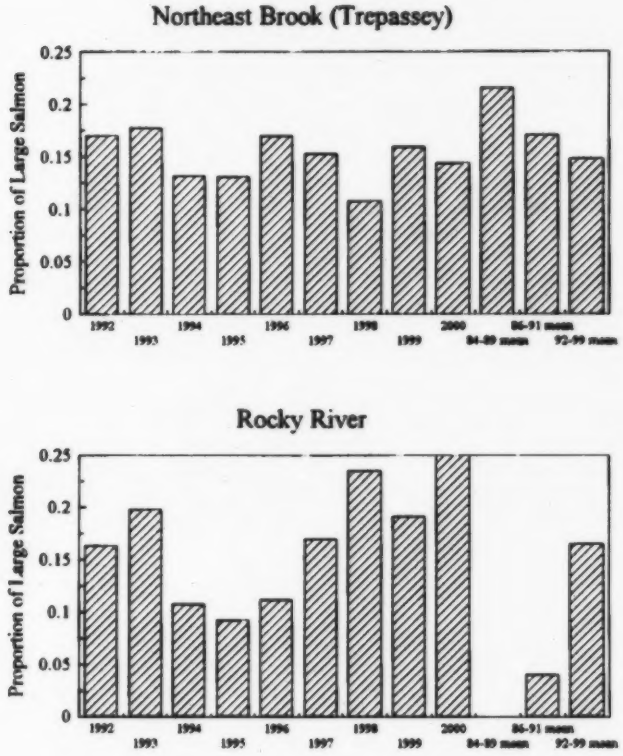

Fig. 16. Proportion of large salmon in total returns to Northeast Brook (Trepassey) and Rocky River, SFA 9, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

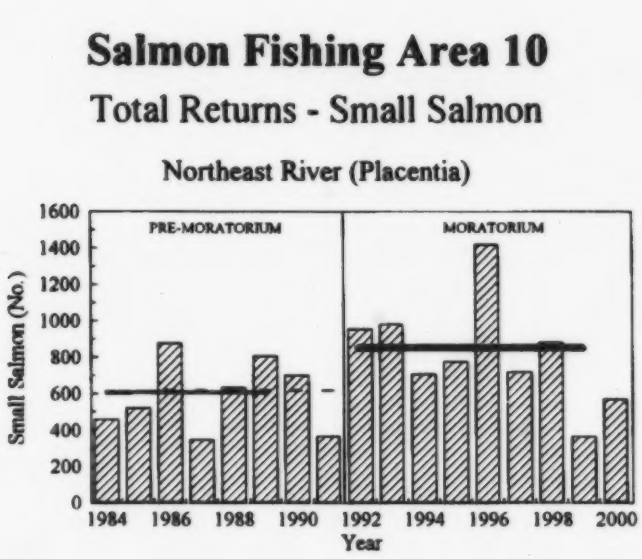

Fig. 17. Total returns of small salmon to Northeast River, Placentia (SFA 10), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

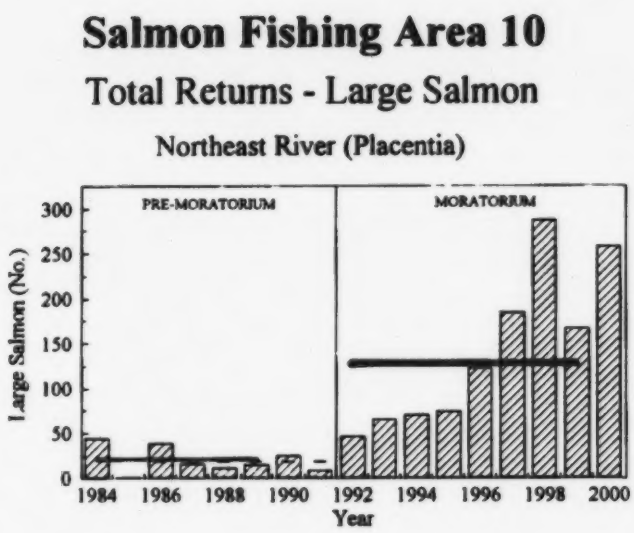

Fig. 18. Total returns of large salmon to Northeast River, Placentia (SFA 10), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 10

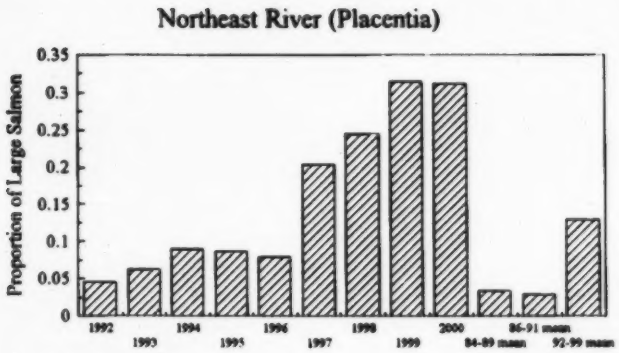

Fig. 19. Proportion of large salmon in total returns to Northeast River (Placentia), SFA 10, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

Salmon Fishing Area 11

Total Returns - Small Salmon

Conne River

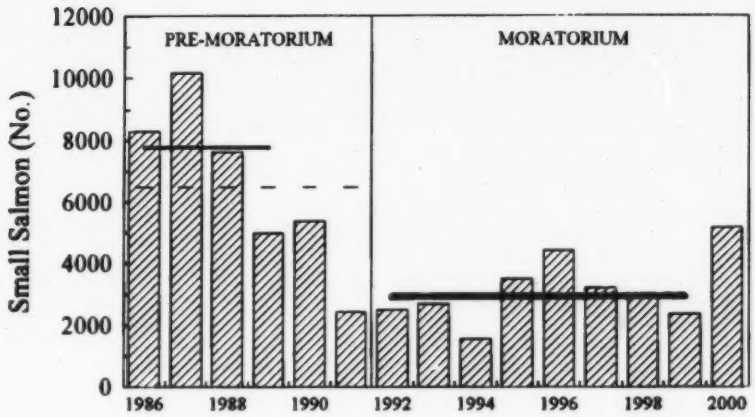

Fig. 20. Total returns of small salmon to Conne River (SFA 11), 1986-2000. The thin solid line represents the 1986-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 11

Total Returns - Large Salmon

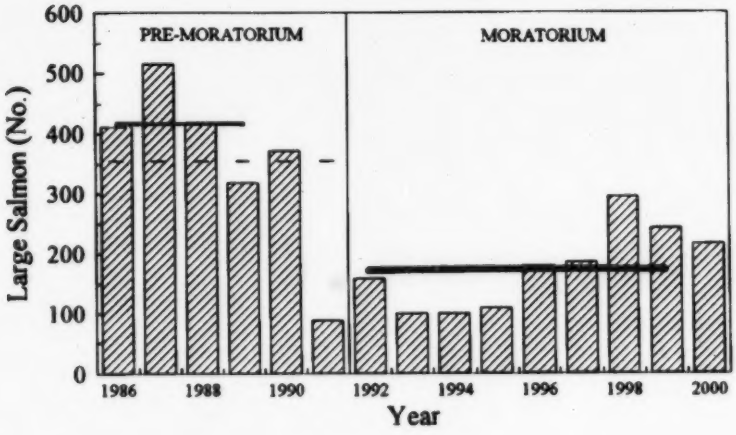

Fig. 21. Total returns of large salmon to Conne River (SFA 11), 1986-2000. The thin solid line represents the 1986-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 11

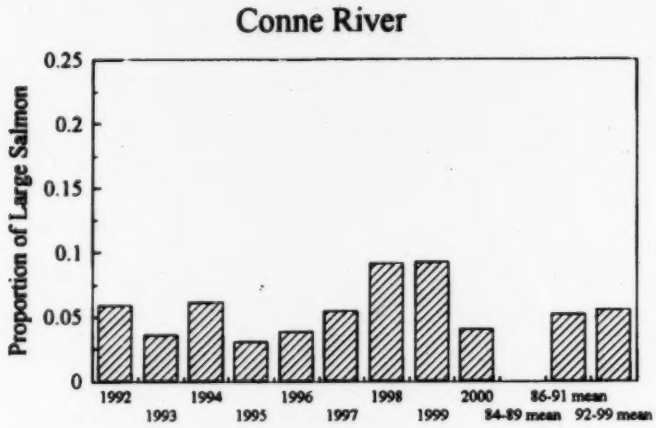

Fig. 22. Proportion of large salmon in total returns to Conne River, SFA 11, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

Salmon Fishing Area 13

Total Returns - Small Salmon

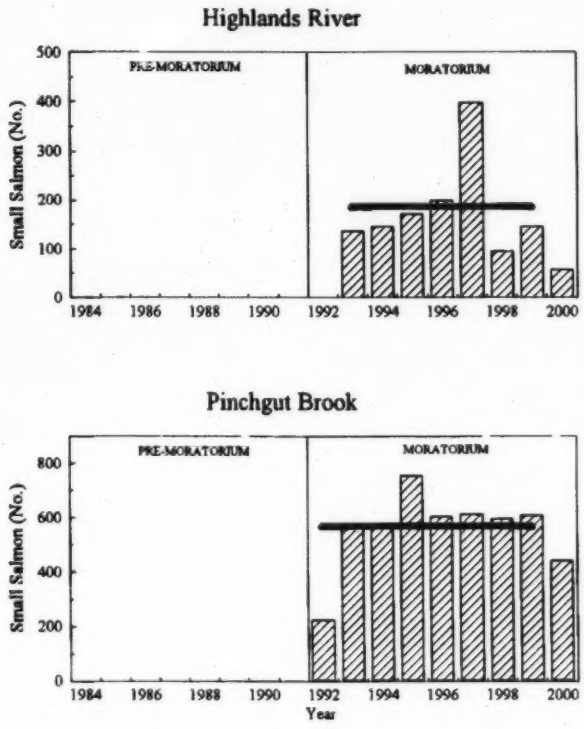

Fig. 23. Total returns of small salmon to Highlands River and Pinchgut Brook (SFA 13), 1984-2000. The thick solid horizontal line represents the 1992-99 mean.

Salmon Fishing Area 13

Total Returns - Large Salmon

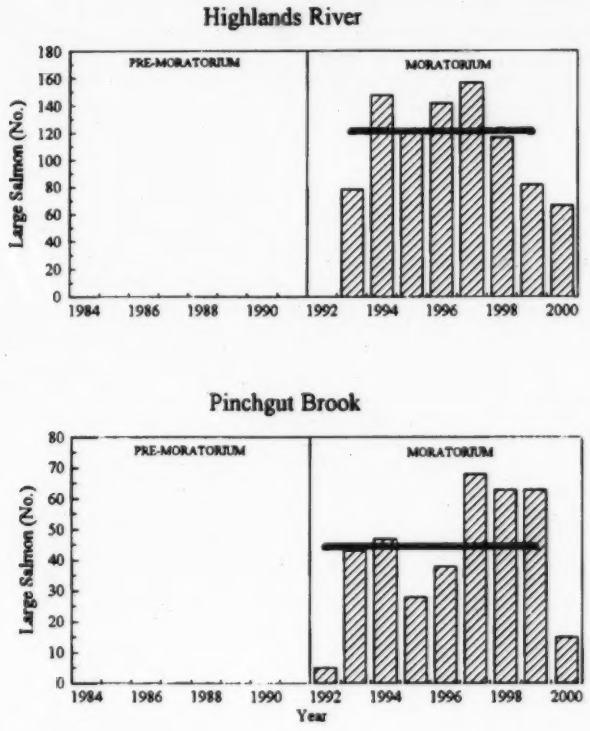

Fig. 24. Total returns of large salmon to Highlands River and Pinchgut Brook (SFA 13), 1984-2000. The thick solid horizontal line represents the 1992-99 mean.

Salmon Fishing Area 13

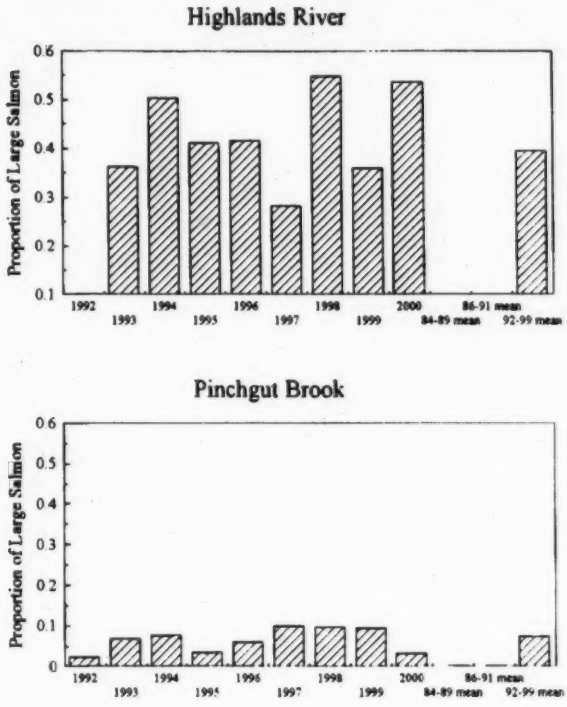

Fig. 25. Proportion of large salmon in total returns to Highlands River and Pinchgut Brook , SFA 13, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

Salmon Fishing Area 14A

Total Returns - Small Salmon

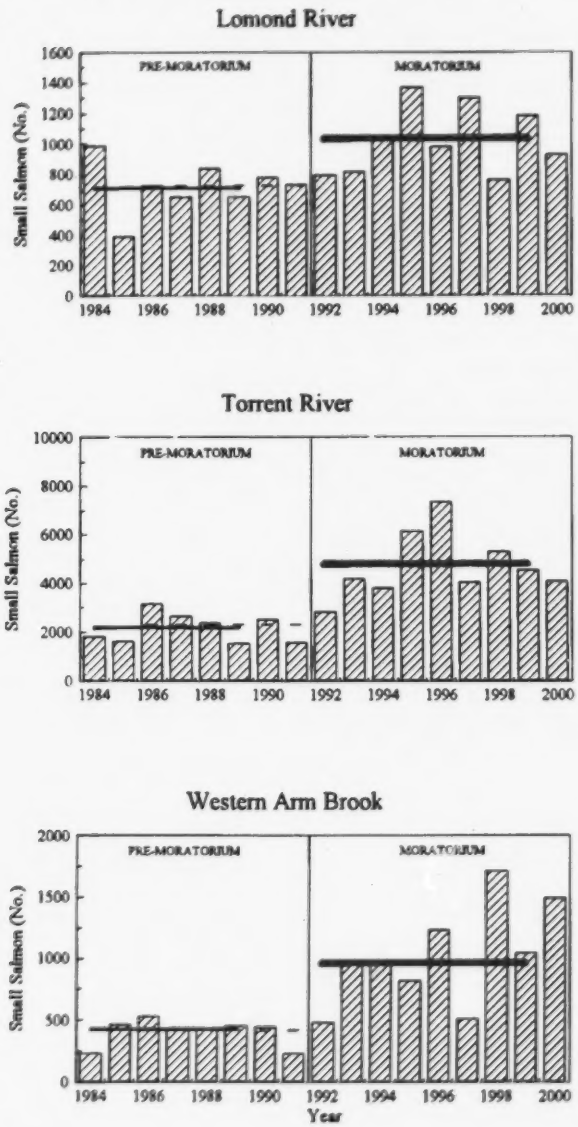

Fig. 26. Total returns of small salmon to Lomond River, Torrent River and Western Arm Brook (SFA 14A), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

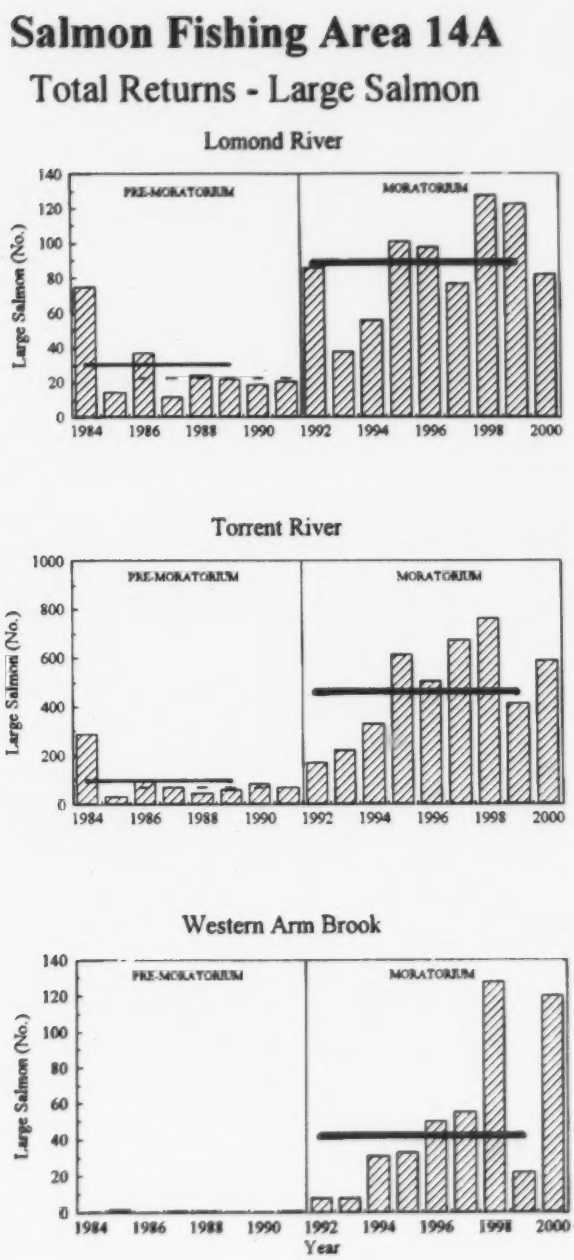

Fig. 27. Total returns of large salmon to Lomond River, Torrent River and Western Arm Brook (SFA 14A), 1984-2000. The thin solid horizontal line represents the 1984-89 mean, the broken line the 1986-91 mean, and the thick solid line the 1992-99 mean.

Salmon Fishing Area 14A

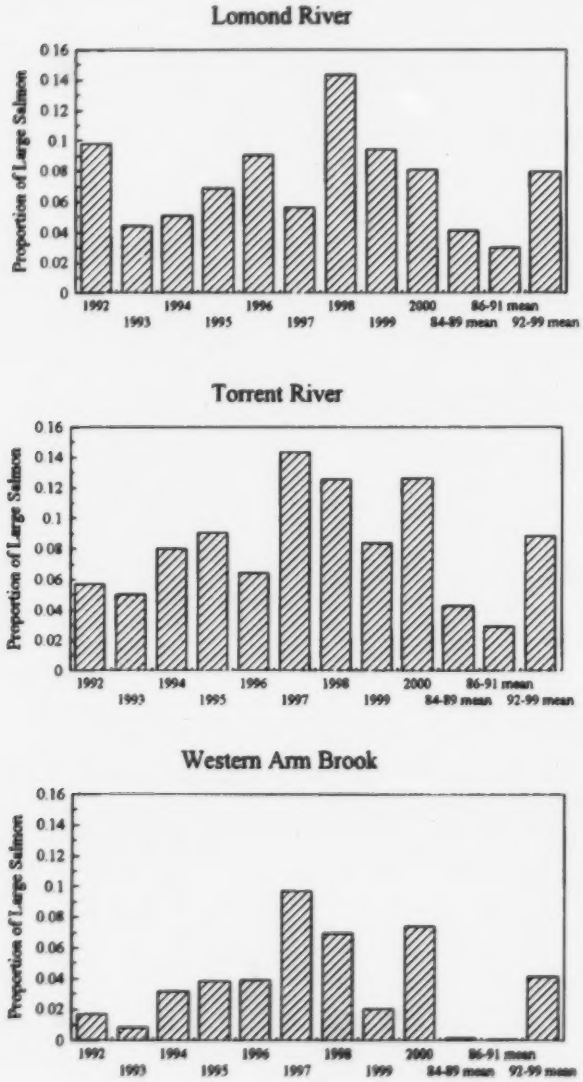

Fig. 28. Proportion of large salmon in total returns to Lomond River, Torrent River and Western Arm Brook, SFA 14A, 1992-2000, and the 1984-89, 1986-91 and 1992-99 means.

Appendix 1a. Atlantic salmon recreational fishery catch and effort data for insular Newfoundland (SFAs 3 - 14A), 1974-2000. Ret. = retained fish, Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	108199	26485	.	26485	1213	.	1213	27698	.	27698	0.26
1975	102907	33390	.	33390	1241	.	1241	34631	.	34631	0.34
1976	115847	34463	.	34463	1051	.	1051	35514	.	35514	0.31
1977	111836	34352	.	34352	2755	.	2755	37107	.	37107	0.33
1978	96659	28619	.	28619	1563	.	1563	30182	.	30182	0.31
1979	82578	31169	.	31169	561	.	561	31730	.	31730	0.38
1980	104332	35849	.	35849	1922	.	1922	37771	.	37771	0.36
1981	122476	46670	.	46670	1369	.	1369	48039	.	48039	0.39
1982	129369	41871	.	41871	1248	.	1248	43119	.	43119	0.33
1983	126308	32420	.	32420	1382	.	1382	33802	.	33802	0.27
1984	121979	39331	.	39331	511	.	511	39842	.	39842	0.33
1985	120030	36552	.	36552	*	315	315	36552	315	36867	0.31
1986	123528	37496	.	37496	*	798	798	37496	798	38294	0.31
1987	85969	24482	.	24482	*	410	410	24482	410	24892	0.29
1988	120497	39841	.	39841	*	600	600	39841	600	40441	0.34
1989	91286	18462	.	18462	*	183	183	18462	183	18645	0.20
1990	105736	29967	.	29967	*	503	503	29967	503	30470	0.29
1991	89812	20529	.	20529	*	336	336	20529	336	20865	0.23
1992	95931	23118	5642	28760	*	1413	1413	23118	7055	30173	0.31
1993	125661	24693	16403	41096	*	1640	1640	24693	18043	42736	0.34
1994	141508	28959	8370	37329	*	2052	2052	28959	10422	39381	0.28
1995	143275	29055	9575	38630	*	2188	2188	29055	11763	40818	0.28
1996***		36715	18603	55318	*	2639	2639	36715	21242	57957	
1997**		17388	15456	32844	*	3332	3332	17388	18788	36176	
1998**		19672	21476	41148	*	3597	3597	19672	25073	44745	
1999**		19960	13698	33658	*	3464	3464	19960	17162	37122	
2000**		14709	12174	26883	*	2250	2250	14709	14424	29133	
84-89 $\bar{X}$	115464.0	34336.4	.	34336.4	.	474.0	481.4	34438.6	474.0	34817.8	0.30
95% CL	16865.5	11141.0	.	11141.0	.	441.3	298.9	11232.5	441.3	11356.3	0.06
N	5	5	0	5	0	4	5	5	4	5	5
86-91 $\bar{X}$	106171.8	29259.0	.	29259.0	.	484.0	484.0	29259.0	484.0	29743.0	0.28
95% CL	19588.7	11990.2	.	11990.2	.	294.4	294.4	11990.2	294.4	12259.7	0.07
N	5	5	0	5	0	5	5	5	5	5	5
92-96 $\bar{X}$	126593.8	28508.0	11718.6	40226.6	.	1986.4	1986.4	28508.0	13705.0	42213.0	
95% CL	34878.5	6553.5	6858.2	11955.1	.	595.3	595.3	6553.5	7196.1	12462.3	
N	4	5	5	5	0	5	5	5	5	5	
97-99 $\bar{X}$		19006.7	16876.7	35883.3	.	3464.3	3464.3	19006.7	20341.0	39347.7	
95% CL		3500.9	10133.6	11372.0	.	329.2	329.2	3500.9	10379.3	11671.7	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-95 AND ON RETAINED FISH ONLY PRIOR TO 1985

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA WERE OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

***DATA WERE UNAVAILABLE FOR SOME RIVERS IN INS NEWFOUNDLAND (SFAs 12 & 13) IN 1996, THEREFORE LICENSE STUB DATA WERE USED

Appendix 1b. Atlantic salmon recreational fishery catch and effort data for Northern Peninsula East & Eastern (SFAs 3 - 8), 1974-2000. Ret. = retained fish, Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	38626	8336	.	8336	110	.	110	8446	.	8446	0.22
1975	35673	9259	.	9259	190	.	190	9449	.	9449	0.26
1976	38552	9885	.	9885	256	.	256	10141	.	10141	0.26
1977	45112	15102	.	15102	1154	.	1154	16256	.	16256	0.36
1978	39561	12829	.	12829	539	.	539	13368	.	13368	0.34
1979	31365	11866	.	11866	349	.	349	12215	.	12215	0.39
1980	40581	14401	.	14401	588	.	588	14989	.	14989	0.37
1981	49396	20187	.	20187	430	.	430	20617	.	20617	0.42
1982	51961	15568	.	15568	435	.	435	16003	.	16003	0.31
1983	46821	13404	.	13404	518	.	518	13922	.	13922	0.30
1984	49240	14091	.	14091	25	.	25	14116	.	14116	0.29
1985	52799	17628	.	17628	*	.	.	17628	.	17628	0.33
1986	48582	14803	.	14803	*	.	.	14803	.	14803	0.30
1987	27158	7888	.	7888	*	.	.	7888	.	7888	0.29
1988	46400	16412	.	16412	*	.	.	16412	.	16412	0.35
1989	30571	6352	.	6352	*	.	.	6352	.	6352	0.21
1990	38956	10262	.	10262	*	.	.	10262	.	10262	0.26
1991	35084	8489	.	8489	*	.	.	8489	.	8489	0.24
1992	36254	9063	2373	11436	*	11	11	9063	2384	11447	0.32
1993	52640	9729	11911	21640	*	426	426	9729	12337	22066	0.42
1994	72813	16250	5283	21533	*	539	539	16250	5822	22072	0.30
1995	63184	12823	4738	17561	*	421	421	12823	5159	17982	0.28
1996	71615	17555	8244	25799	*	505	505	17555	8749	26304	0.37
1997**		5934	4171	10105	*	521	521	5934	4692	10626	
1998**		10783	11213	21996	*	1007	1007	10783	12220	23003	
1999**		10503	6169	16672	*	917	917	10503	7086	17589	
2000**		5788	3197	8985	*	435	435	5788	3632	9420	
84-89 $\bar{X}$	45518.4	13857.2	.	13857.2	.	.	.	13862.2	.	13862.2	0.30
95% CL	10759.4	5483.0	.	5483.0	.	.	.	5483.4	.	5483.4	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	39918.6	11263.6	.	11263.6	.	.	.	11263.6	.	11263.6	0.28
95% CL	9388.1	5261.9	.	5261.9	.	.	.	5261.9	.	5261.9	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	59301.2	13084.0	6509.8	19593.8	.	380.4	380.4	13084.0	6890.2	19974.2	0.34
95% CL	18877.0	4707.2	4558.8	6718.1	.	264.0	264.0	4707.2	4709.7	6954.6	0.07
N	5	5	5	5	0	5	5	5	5	5	5
97-99 $\bar{X}$		9073.3	7184.3	16257.7	.	815.0	815.0	9073.3	7999.3	17072.7	
95% CL		6763.2	9016.0	14797.5	.	642.3	642.3	6763.2	9555.3	15414.4	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA WERE OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1c. Atlantic salmon recreational fishery catch and effort data for South (SFAs 9 - 11), 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29268	7182	.	7182	61	.	61	7243	.	7243	0.25
1975	24518	6800	.	6800	55	.	55	6855	.	6855	0.28
1976	26301	6517	.	6517	64	.	64	6581	.	6581	0.25
1977	23945	6273	.	6273	32	.	32	6305	.	6305	0.26
1978	24038	6894	.	6894	77	.	77	6971	.	6971	0.29
1979	18834	5983	.	5983	30	.	30	6013	.	6013	0.32
1980	26044	8972	.	8972	132	.	132	9104	.	9104	0.35
1981	28488	10241	.	10241	122	.	122	10363	.	10363	0.36
1982	33239	10419	.	10419	96	.	96	10515	.	10515	0.32
1983	35346	8212	.	8212	177	.	177	8389	.	8389	0.24
1984	30500	10740	.	10740	22	.	22	10762	.	10762	0.35
1985	29984	8899	.	8899	*	.	.	8899	.	8899	0.30
1986	30427	9379	.	9379	*	.	.	9379	.	9379	0.31
1987	20651	5125	.	5125	*	.	.	5125	.	5125	0.25
1988	27166	7548	.	7548	*	.	.	7548	.	7548	0.28
1989	23291	5173	.	5173	*	.	.	5173	.	5173	0.22
1990	25538	7147	.	7147	*	.	.	7147	.	7147	0.28
1991	17089	2643	.	2643	*	.	.	2643	.	2643	0.15
1992	18100	3208	1732	4940	*	8	8	3208	1740	4948	0.27
1993	29280	5215	1506	6721	*	84	84	5215	1590	6805	0.23
1994	25073	4055	917	4972	*	61	61	4055	978	5033	0.20
1995	35146	6299	1499	7798	*	47	47	6299	1546	7845	0.22
1996	41628	7498	2425	9923	*	139	139	7498	2564	10062	0.24
1997**		3521	2732	6253	*	264	264	3521	2996	6517	
1998**		2563	2391	4954	*	319	319	2563	2710	5273	
1999**		2334	1931	4265	*	304	304	2334	2235	4569	
2000**		2658	3543	6201	*	390	390	2658	3933	6591	
84-89 $\bar{X}$	28273.6	8347.8	.	8347.8	.	.	.	8352.2	.	8352.2	0.30
95% CL	3855.2	2619.5	.	2619.5	.	.	.	2627.3	.	2627.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24702.2	6378.0	.	6378.0	.	.	.	6378.0	.	6378.0	0.26
95% CL	6191.6	3187.5	.	3187.5	.	.	.	3187.5	.	3187.5	0.07
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	29845.4	5255.0	1615.8	6870.8	.	67.8	67.8	5255.0	1683.6	6938.6	0.23
95% CL	11241.5	2128.0	675.0	2599.0	.	60.1	60.1	2128.0	708.8	2647.3	0.02
N	5	5	5	5	0	5	5	5	5	5	5
97-99 $\bar{X}$		2806.0	2351.3	5157.3	.	295.7	295.7	2806.0	2647.0	5453.0	
95% CL		1564.4	998.6	2507.9	.	70.6	70.6	1564.4	955.0	2450.5	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA WERE OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1d. Atlantic salmon recreational fishery catch and effort data for Southwest (SFAs 12 & 13), 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	30736	7847	.	7847	929	.	929	8776	.	8776	0.29
1975	33457	12513	.	12513	906	.	906	13419	.	13419	0.40
1976	33848	10680	.	10680	631	.	631	11311	.	11311	0.33
1977	25712	7270	.	7270	1097	.	1097	8367	.	8367	0.33
1978	20991	5655	.	5655	875	.	875	6530	.	6530	0.31
1979	18094	6742	.	6742	123	.	123	6865	.	6865	0.38
1980	23488	8733	.	8733	1022	.	1022	9755	.	9755	0.42
1981	25874	10360	.	10360	680	.	680	11040	.	11040	0.43
1982	28056	11121	.	11121	610	.	610	11731	.	11731	0.42
1983	28121	7004	.	7004	618	.	618	7622	.	7622	0.27
1984	25742	9693	.	9693	377	.	377	10070	.	10070	0.39
1985	23859	6399	.	6399	*	287	287	6399	287	6686	0.28
1986	29137	8284	.	8284	*	696	696	8284	696	8980	0.31
1987	23099	6849	.	6849	*	369	369	6849	369	7218	0.31
1988	27963	9630	.	9630	*	429	429	9630	429	10059	0.36
1989	21201	3734	.	3734	*	139	139	3734	139	3873	0.18
1990	24829	7508	.	7508	*	367	367	7508	367	7875	0.32
1991	23789	5832	.	5832	*	219	219	5832	219	6051	0.25
1992	24460	6069	1006	7075	*	1025	1025	6069	2031	8100	0.33
1993	25883	5844	984	6828	*	754	754	5844	1738	7582	0.29
1994	22576	4225	1073	5298	*	977	977	4225	2050	6275	0.28
1995	20786	3843	1251	5094	*	989	989	3843	2240	6083	0.29
1996***		5177	4926	10103	*	1289	1289	5177	6215	11392	
1997**		4419	6731	11150	*	2130	2130	4419	8861	13280	
1998**		2718	4399	7117	*	1802	1802	2718	6201	8919	
1999**		3774	3223	6997	*	1493	1493	3774	4716	8490	
2000**		3473	3135	6608	*	1037	1037	3473	4172	7645	
84-89 $\bar{X}$	25166.8	7431.5	.	7431.5	.	384.0	382.8	7494.3	384.0	7814.3	0.31
95% CL	3170.6	2382.0	.	2382.0	.	255.2	193.0	2464.9	255.2	2512.4	0.07
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	25003.0	6972.8	.	6972.8	.	369.8	369.8	6972.8	369.8	7342.7	0.29
95% CL	3164.0	2144.5	.	2144.5	.	202.4	202.4	2144.5	202.4	2302.7	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	23426.3	5031.6	1848.0	6879.6	.	1006.8	1006.8	5031.6	2854.8	7886.4	
95% CL	3533.6	1213.3	2140.1	2492.3	.	236.4	236.4	1213.3	2342.6	2653.7	
N	4	5	5	5	0	5	5	5	5	5	
97-99 $\bar{X}$		3637.0	4784.3	8421.3	.	1808.3	1808.3	3637.0	6592.7	10229.7	
95% CL		2133.4	4435.7	5872.6	.	791.4	791.4	2133.4	5217.3	6584.4	
N		3	3	3	0	3	3	3	3	3	

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-95 AND ON RETAINED FISH ONLY PRIOR TO 1985

**DATA WERE OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

***FOR RIVERS WHERE DFO DATA WERE UNAVAILABLE LICENSE STUB RETURN DATA WERE USED

Appendix 1e. Atlantic salmon recreational fishery catch and effort data for the Northern Peninsula West (SFA 14A), 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>=63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
1997**		3514	1822	5336	*	417	417	3514	2239	5753	
1998**		3608	3473	7081	*	469	469	3608	3942	7550	
1999**		3349	2375	5724	*	750	750	3349	3125	6474	
2000**		2790	2299	5089	*	388	388	2790	2687	5477	
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	21211.2	5137.4	1745.0	6882.4	.	531.4	531.4	5137.4	2276.4	7413.8	0.35
95% CL	4747.0	1370.3	1189.5	2302.4	.	218.6	218.6	1370.3	1354.4	2504.4	0.05
N	5	5	5	5	0	5	5	5	5	5	5
97-99 $\bar{X}$		3490.3	2556.7	6047.0	.	545.3	545.3	3490.3	3102.0	6592.3	
95% CL		325.7	2087.7	2276.3	.	445.1	445.1	325.7	2116.0	2246.7	
N		3	3	3	0	3	3	3	3	3	

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-96 AND ON RETAINED FISH ONLY PRIOR TO 1985

**DATA WERE OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1f. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 3, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1890	839	.	839	4	.	4	843	.	843	0.45
1975	1948	1107	.	1107	0	.	0	1107	.	1107	0.57
1976	2284	947	.	947	1	.	1	948	.	948	0.42
1977	2249	1530	.	1530	4	.	4	1534	.	1534	0.68
1978	2030	758	.	758	1	.	1	759	.	759	0.37
1979	2514	2040	.	2040	0	.	0	2040	.	2040	0.81
1980	2585	1743	.	1743	37	.	37	1780	.	1780	0.69
1981	3113	2358	.	2358	3	.	3	2361	.	2361	0.76
1982	3907	2634	.	2634	88	.	88	2722	.	2722	0.70
1983	4075	1617	.	1617	2	.	2	1619	.	1619	0.40
1984	2248	1001	.	1001	0	.	0	1001	.	1001	0.45
1985	2355	1310	.	1310	*	.	.	1310	.	1310	0.56
1986	1430	772	.	772	*	.	.	772	.	772	0.54
1987	1121	563	.	563	*	.	.	563	.	563	0.50
1988	2979	1756	.	1756	*	.	.	1756	.	1756	0.59
1989	1672	738	.	738	*	.	.	738	.	738	0.44
1990	3159	1718	.	1718	*	.	.	1718	.	1718	0.54
1991	3495	1316	.	1316	*	.	.	1316	.	1316	0.38
1992	3961	1562	120	1682	*	5	5	1562	125	1687	0.43
1993	4384	1480	2585	4065	*	152	152	1480	2737	4217	0.96
1994	7715	3314	1844	5158	*	404	404	3314	2248	5562	0.72
1995	5438	1405	890	2295	*	186	186	1405	1076	2481	0.46
1996	6363	2122	1118	3240	*	143	143	2122	1261	3383	0.53
1997**		1632	1296	2928	*	132	132	1632	1428	3060	
1998**		2633	2750	5383	*	144	144	2633	2894	5527	
1999**		1862	1330	3192	*	136	136	1862	1466	3328	
2000**		1245	906	2151	*	83	83	1245	989	2234	
84-89 $\bar{X}$	2136.8	1115.4	.	1115.4	.	.	.	1115.4	.	1115.4	0.52
95% CL	756.4	527.3	.	527.3	.	.	.	527.3	.	527.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2547.0	1260.0	.	1260.0	.	.	.	1260.0	.	1260.0	0.49
95% CL	1156.8	611.2	.	611.2	.	.	.	611.2	.	611.2	0.13
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	5572.2	1976.6	1311.4	3288.0	0.0	178.0	178.0	1976.6	1489.4	3466.0	0.62
95% CL	1887.1	992.2	1167.9	1718.9	0.0	178.8	178.8	992.2	1274.6	1872.4	0.24
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		2042.3	1792.0	3834.3	.	137.3	137.3	2042.3	1929.3	3971.7	
95% CL		1302.5	2061.6	3348.1	.	15.2	15.2	1302.5	2076.0	3362.8	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Appendix 1g. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 4, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	22038	5373	.	5373	82	.	82	5455	.	5455	0.25
1975	22384	5943	.	5943	166	.	166	6109	.	6109	0.27
1976	24787	6683	.	6683	188	.	188	6871	.	6871	0.28
1977	28117	8396	.	8396	1086	.	1086	9482	.	9482	0.34
1978	24131	8774	.	8774	502	.	502	9276	.	9276	0.38
1979	21496	8026	.	8026	327	.	327	8353	.	8353	0.39
1980	25172	9414	.	9414	507	.	507	9921	.	9921	0.39
1981	32282	13536	.	13536	361	.	361	13897	.	13897	0.43
1982	32929	9973	.	9973	258	.	258	10231	.	10231	0.31
1983	26649	8954	.	8954	297	.	297	9251	.	9251	0.35
1984	29633	9900	.	9900	15	.	15	9915	.	9915	0.33
1985	34329	12190	.	12190	*	.	.	12190	.	12190	0.36
1986	31650	9293	.	9293	*	.	.	9293	.	9293	0.29
1987	18564	5453	.	5453	*	.	.	5453	.	5453	0.29
1988	27413	9854	.	9854	*	.	.	9854	.	9854	0.36
1989	17767	3786	.	3786	*	.	.	3786	.	3786	0.21
1990	23533	5661	.	5661	*	.	.	5661	.	5661	0.24
1991	21999	4892	.	4892	*	.	.	4892	.	4892	0.22
1992	19485	5290	1515	6805	*	5	5	5290	1520	6810	0.35
1993	30958	5724	7232	12956	*	158	158	5724	7390	13114	0.42
1994	43242	9351	2728	12079	*	79	79	9351	2807	12158	0.28
1995	36717	7979	3199	11178	*	151	151	7979	3350	11329	0.31
1996	44385	10960	6374	17334	*	232	232	10960	6606	17566	0.40
1997**		3353	2461	5814	*	338	338	3353	2799	6152	
1998**		6584	7072	13656	*	686	686	6584	7758	14342	
1999**		7266	4101	11367	*	652	652	7266	4753	12019	
2000**		3370	1600	4970	*	233	233	3370	1833	5203	
84-89 $\bar{X}$	28158.4	9004.6	.	9004.6	.	.	.	9007.6	.	9007.6	0.32
95% CL	7875.7	3875.8	.	3875.8	.	.	.	3877.2	.	3877.2	0.06
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	24472.4	6697.2	.	6697.2	.	.	.	6697.2	.	6697.2	0.27
95% CL	6573.0	3372.1	.	3372.1	.	.	.	3372.1	.	3372.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	34957.4	7860.8	4209.6	12070.4	0.0	125.0	125.0	7860.8	4334.6	12195.4	0.35
95% CL	12660.5	2977.9	3059.7	4686.9	0.0	107.0	107.0	2977.9	3148.0	4785.8	0.08
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		5734.3	4544.7	10279.0	.	558.7	558.7	5734.3	5103.3	10837.7	
95% CL		5193.0	5806.6	10018.4	.	476.6	476.6	5193.0	6205.9	10486.1	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Appendix 1h. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 5, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel.= released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small +·Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9335	1637	.	1637	21	.	21	1658	.	1658	0.18
1975	7527	1988	.	1988	23	.	23	2011	.	2011	0.27
1976	6975	1898	.	1898	65	.	65	1963	.	1963	0.28
1977	10572	4616	.	4616	44	.	44	4660	.	4660	0.44
1978	9108	2858	.	2858	28	.	28	2886	.	2886	0.32
1979	3926	1331	.	1331	20	.	20	1351	.	1351	0.34
1980	8155	2702	.	2702	29	.	29	2731	.	2731	0.33
1981	8863	3488	.	3488	35	.	35	3523	.	3523	0.40
1982	9935	2433	.	2433	53	.	53	2486	.	2486	0.25
1983	10195	2357	.	2357	170	.	170	2527	.	2527	0.25
1984	12403	2703	.	2703	1	.	1	2704	.	2704	0.22
1985	11613	3484	.	3484	*	.	.	3484	.	3484	0.30
1986	11510	4053	.	4053	*	.	.	4053	.	4053	0.35
1987	5267	1664	.	1664	*	.	.	1664	.	1664	0.32
1988	10497	4166	.	4166	*	.	.	4166	.	4166	0.40
1989	6617	1417	.	1417	*	.	.	1417	.	1417	0.21
1990	7999	2414	.	2414	*	.	.	2414	.	2414	0.30
1991	7002	2048	.	2048	*	.	.	2048	.	2048	0.29
1992	9230	1941	728	2669	*	1	1	1941	729	2670	0.29
1993	12949	2091	2008	4099	*	107	107	2091	2115	4206	0.32
1994	18000	3216	689	3905	*	52	52	3216	741	3957	0.22
1995	16691	2860	586	3446	*	76	76	2860	662	3522	0.21
1996	16415	3948	706	4654	*	113	113	3948	819	4767	0.29
1997**		898	395	1293	*	46	46	898	441	1339	
1998**		1430	1326	2756	*	167	167	1430	1493	2923	
1999**		1277	649	1926	*	123	123	1277	772	2049	
2000**		1100	654	1754	*	112	112	1100	766	1866	
84-89 $\bar{X}$	10528.0	3164.6	.	3164.6	.	.	.	3164.8	.	3164.8	0.30
95% CL	2841.4	1410.2	.	1410.2	.	.	.	1410.1	.	1410.1	0.10
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	8725.0	2819.6	.	2819.6	.	.	.	2819.6	.	2819.6	0.32
95% CL	2694.0	1528.2	.	1528.2	.	.	.	1528.2	.	1528.2	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	14657.0	2811.2	943.4	3754.6	0.0	69.8	69.8	2811.2	1013.2	3824.4	0.26
95% CL	4423.0	1026.5	741.9	925.7	0.0	56.7	56.7	1026.5	767.8	976.7	0.06
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		1201.7	790.0	1991.7	.	112.0	112.0	1201.7	902.0	2103.7	
95% CL		680.4	1195.6	1822.8	.	152.2	152.2	680.4	1336.4	1971.1	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Appendix 1i. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 6, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2685	303	.	303	1	.	1	304	.	304	0.11
1975	1851	94	.	94	1	.	1	95	.	95	0.05
1976	2864	247	.	247	2	.	2	249	.	249	0.09
1977	1869	401	.	401	19	.	19	420	.	420	0.22
1978	2237	296	.	296	7	.	7	303	.	303	0.14
1979	1766	244	.	244	2	.	2	246	.	246	0.14
1980	2807	320	.	320	14	.	14	334	.	334	0.12
1981	3406	605	.	605	29	.	29	634	.	634	0.19
1982	3031	288	.	288	17	.	17	305	.	305	0.10
1983	3684	296	.	296	10	.	10	306	.	306	0.08
1984	3218	312	.	312	5	.	5	317	.	317	0.10
1985	2256	429	.	429	*	.	.	429	.	429	0.19
1986	2596	445	.	445	*	.	.	445	.	445	0.17
1987	1306	137	.	137	*	.	.	137	.	137	0.10
1988	3392	429	.	429	*	.	.	429	.	429	0.13
1989	2959	246	.	246	*	.	.	246	.	246	0.08
1990	3089	334	.	334	*	.	.	334	.	334	0.11
1991	1620	186	.	186	*	.	.	186	.	186	0.11
1992	2265	230	10	240	*	0	0	230	10	240	0.11
1993	2784	323	81	404	*	9	9	323	90	413	0.15
1994	2429	241	21	262	*	4	4	241	25	266	0.11
1995	2513	336	61	397	*	8	8	336	69	405	0.16
1996	2331	327	43	370	*	17	17	327	60	387	0.17
1997**		33	14	47	*	2	2	33	16	49	
1998**		71	42	113	*	4	4	71	46	117	
1999**		66	26	92	*	4	4	66	30	96	
2000**		52	16	68	*	7	7	52	23	75	
84-89 $\bar{X}$	2884.2	372.2	.	372.2	.	.	.	373.2	.	373.2	0.13
95% CL	573.2	109.8	.	109.8	.	.	.	108.8	.	108.8	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	2731.2	328.0	.	328.0	.	.	.	328.0	.	328.0	0.12
95% CL	848.8	139.9	.	139.9	.	.	.	139.9	.	139.9	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	2464.4	291.4	43.2	334.6	0.0	7.6	7.6	291.4	50.8	342.2	0.14
95% CL	250.9	63.8	35.9	96.5	0.0	7.9	7.9	63.8	40.6	102.4	0.03
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		56.7	27.3	84.0	.	3.3	3.3	56.7	30.7	87.3	
95% CL		51.3	34.9	83.8	.	2.9	2.9	51.3	37.3	86.5	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1j. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 7, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	2019	133	.	133	2	.	2	135	.	135	0.07
1975	1436	40	.	40	0	.	0	40	.	40	0.03
1976	1128	30	.	30	0	.	0	30	.	30	0.03
1977	1775	78	.	78	1	.	1	79	.	79	0.04
1978	1786	99	.	99	1	.	1	100	.	100	0.06
1979	1332	125	.	125	0	.	0	125	.	125	0.09
1980	1546	102	.	102	1	.	1	103	.	103	0.07
1981	1348	123	.	123	2	.	2	125	.	125	0.09
1982	1621	155	.	155	10	.	10	165	.	165	0.10
1983	1804	139	.	139	34	.	34	173	.	173	0.10
1984	1381	96	.	96	4	.	4	100	.	100	0.07
1985	1635	112	.	112	*	.	.	112	.	112	0.07
1986	700	102	.	102	*	.	.	102	.	102	0.15
1987	632	28	.	28	*	.	.	28	.	28	0.04
1988	1645	128	.	128	*	.	.	128	.	128	0.08
1989	1226	66	.	66	*	.	.	66	.	66	0.05
1990	827	49	.	49	*	.	.	49	.	49	0.06
1991	644	36	.	36	*	.	.	36	.	36	0.06
1992	1313	40	0	40	*	0	0	40	0	40	0.03
1993	1107	58	3	61	*	0	0	58	3	61	0.06
1994	1162	71	0	71	*	0	0	71	0	71	0.06
1995	1425	170	0	170	*	0	0	170	0	170	0.12
1996	1603	139	3	142	*	0	0	139	3	142	0.09
1997**		9	0	9	*	3	3	9	3	12	
1998**		46	8	54	*	2	2	46	10	56	
1999**		12	2	14	*	0	0	12	2	14	
2000**		14	5	19	*	0	0	14	5	19	
84-89 $\bar{X}$	1317.4	100.8	.	100.8	.	.	.	101.6	.	101.6	0.08
95% CL	481.5	28.5	.	28.5	.	.	.	28.3	.	28.3	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	1008.4	76.2	.	76.2	.	.	.	76.2	.	76.2	0.08
95% CL	524.3	47.3	.	47.3	.	.	.	47.3	.	47.3	0.04
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	1322.0	95.6	1.2	96.8	0.0	0.0	0.0	95.6	1.2	96.8	0.07
95% CL	249.4	69.5	2.0	69.6	0.0	0.0	0.0	69.5	2.0	69.6	0.04
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		22.3	3.3	25.7	.	1.7	1.7	22.3	5.0	27.3	
95% CL		51.1	10.3	61.3	.	3.8	3.8	51.1	10.8	61.7	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN.

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Appendix 1k. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 8, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	659	51	.	51	0	.	0	51	.	51	0.08
1975	527	87	.	87	0	.	0	87	.	87	0.17
1976	514	80	.	80	0	.	0	80	.	80	0.16
1977	530	81	.	81	0	.	0	81	.	81	0.15
1978	269	44	.	44	0	.	0	44	.	44	0.16
1979	331	100	.	100	0	.	0	100	.	100	0.30
1980	316	120	.	120	0	.	0	120	.	120	0.38
1981	384	77	.	77	0	.	0	77	.	77	0.20
1982	538	85	.	85	9	.	9	94	.	94	0.17
1983	414	41	.	41	5	.	5	46	.	46	0.11
1984	357	79	.	79	0	.	0	79	.	79	0.22
1985	611	103	.	103	*	.	.	103	.	103	0.17
1986	696	138	.	138	*	.	.	138	.	138	0.20
1987	268	43	.	43	*	.	.	43	.	43	0.16
1988	474	79	.	79	*	.	.	79	.	79	0.17
1989	330	99	.	99	*	.	.	99	.	99	0.30
1990	349	86	.	86	*	.	.	86	.	86	0.25
1991	324	11	.	11	*	.	.	11	.	11	0.03
1992	.	.	.	.	*	.	.	.	.	.	.
1993	458	53	2	55	*	0	0	53	2	55	0.12
1994	265	57	1	58	*	0	0	57	1	58	0.22
1995	400	73	2	75	*	0	0	73	2	75	0.19
1996	518	59	0	59	*	0	0	59	0	59	0.11
1997**		9	5	14	*	0	0	9	5	14	
1998**		19	15	34	*	4	4	19	19	38	
1999**		20	61	81	*	2	2	20	63	83	
2000**		7	16	23	*	0	0	7	16	23	
84-89 $\bar{X}$	493.6	99.6	.	99.6	.	.	.	99.6	.	99.6	0.20
95% CL	196.8	30.0	.	30.0	.	.	.	30.0	.	30.0	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	434.6	82.6	.	82.6	.	.	.	82.6	.	82.6	0.19
95% CL	196.7	57.2	.	57.2	.	.	.	57.2	.	57.2	0.09
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	410.3	60.5	1.3	61.8	0.0	0.0	0.0	60.5	1.3	61.8	0.15
95% CL	172.1	13.8	1.5	14.3	0.0	0.0	0.0	13.8	1.5	14.3	0.07
N	4	4	4	4	4	4	4	4	4	4	4
97-99 $\bar{X}$		16.0	27.0	43.0	.	2.0	2.0	16.0	29.0	45.0	
95% CL		15.1	74.2	85.4	.	5.0	5.0	15.1	75.2	87.0	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 11. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 9, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9162	1494	.	1494	9	.	9	1503	.	1503	0.16
1975	10046	1872	.	1872	6	.	6	1878	.	1878	0.19
1976	8809	1623	.	1623	12	.	12	1635	.	1635	0.19
1977	8766	1080	.	1080	9	.	9	1089	.	1089	0.12
1978	7224	1303	.	1303	17	.	17	1320	.	1320	0.18
1979	5859	1704	.	1704	15	.	15	1719	.	1719	0.29
1980	6446	2379	.	2379	61	.	61	2440	.	2440	0.38
1981	6343	1862	.	1862	52	.	52	1914	.	1914	0.30
1982	8574	1825	.	1825	33	.	33	1858	.	1858	0.22
1983	10754	2303	.	2303	71	.	71	2374	.	2374	0.22
1984	8754	2264	.	2264	5	.	5	2269	.	2269	0.26
1985	9385	1750	.	1750	*	.	.	1750	.	1750	0.19
1986	8807	2298	.	2298	*	.	.	2298	.	2298	0.26
1987	5994	867	.	867	*	.	.	867	.	867	0.14
1988	7157	1373	.	1373	*	.	.	1373	.	1373	0.19
1989	7039	1315	.	1315	*	.	.	1315	.	1315	0.19
1990	8240	1866	.	1866	*	.	.	1866	.	1866	0.23
1991	6482	560	.	560	*	.	.	560	.	560	0.09
1992	6177	690	196	886	*	1	1	690	197	887	0.14
1993	10344	1431	151	1582	*	15	15	1431	166	1597	0.15
1994	7154	829	93	922	*	2	2	829	95	924	0.13
1995	10487	1594	307	1901	*	11	11	1594	318	1912	0.18
1996	10365	1371	251	1622	*	25	25	1371	276	1647	0.16
1997**		505	302	807	*	52	52	505	354	859	
1998**		551	419	970	*	112	112	551	531	1082	
1999**		454	211	665	*	78	78	454	289	743	
2000**		519	334	853	*	77	77	519	411	930	
84-89 $\bar{X}$	8228.4	1800.0	.	1800.0	.	.	.	1801.0	.	1801.0	0.22
95% CL	1318.4	583.4	.	583.4	.	.	.	584.9	.	584.9	0.05
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	7545.0	1482.4	.	1482.4	.	.	.	1482.4	.	1482.4	0.20
95% CL	1179.8	810.1	.	810.1	.	.	.	810.1	.	810.1	0.08
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	8905.4	1183.0	199.6	1382.6	0.0	10.8	10.8	1183.0	210.4	1393.4	0.16
95% CL	2575.3	494.3	103.7	563.7	0.0	12.3	12.3	494.3	109.9	572.8	0.02
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		503.3	310.7	814.0	.	80.7	80.7	503.3	391.3	894.7	
95% CL		120.5	259.0	379.2	.	74.8	74.8	120.5	311.2	428.0	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

Appendix 1m. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 10, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	10987	1212	.	1212	14	.	14	1226	.	1226	0.11
1975	5999	427	.	427	9	.	9	436	.	436	0.07
1976	8811	730	.	730	10	.	10	740	.	740	0.08
1977	7213	1097	.	1097	5	.	5	1102	.	1102	0.15
1978	8764	1595	.	1595	42	.	42	1637	.	1637	0.19
1979	6405	849	.	849	8	.	8	857	.	857	0.13
1980	9588	1524	.	1524	27	.	27	1551	.	1551	0.16
1981	9309	1317	.	1317	29	.	29	1346	.	1346	0.14
1982	9331	1256	.	1256	10	.	10	1266	.	1266	0.14
1983	9173	1140	.	1140	79	.	79	1219	.	1219	0.13
1984	6361	1457	.	1457	2	.	2	1459	.	1459	0.23
1985	6887	1326	.	1326	*	.	.	1326	.	1326	0.19
1986	6387	1535	.	1535	*	.	.	1535	.	1535	0.24
1987	3348	429	.	429	*	.	.	429	.	429	0.13
1988	5198	1142	.	1142	*	.	.	1142	.	1142	0.22
1989	4709	898	.	898	*	.	.	898	.	898	0.19
1990	4778	835	.	835	*	.	.	835	.	835	0.17
1991	2960	230	.	230	*	.	.	230	.	230	0.08
1992	3422	245	497	742	*	6	6	245	503	748	0.22
1993	7656	700	691	1391	*	26	26	700	717	1417	0.19
1994	7028	946	150	1096	*	21	21	946	171	1117	0.16
1995	10210	1450	254	1704	*	23	23	1450	277	1727	0.17
1996	15128	2092	428	2520	*	88	88	2092	516	2608	0.17
1997**		705	391	1096	*	79	79	705	470	1175	
1998**		882	456	1338	*	98	98	882	554	1436	
1999**		655	428	1083	*	156	156	655	584	1239	
2000**		571	583	1154	*	164	164	571	747	1318	
84-89 $\bar{X}$	5908.4	1271.6	.	1271.6	.	.	.	1272.0	.	1272.0	0.22
95% CL	1133.5	318.4	.	318.4	.	.	.	318.8	.	318.8	0.03
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	4806.4	928.0	.	928.0	.	.	.	928.0	.	928.0	0.19
95% CL	1529.5	592.5	.	592.5	.	.	.	592.5	.	592.5	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	8688.8	1086.6	404.0	1490.6	0.0	32.8	32.8	1086.6	436.8	1523.4	0.18
95% CL	5387.9	882.3	262.3	840.0	0.0	39.5	39.5	882.3	267.2	876.9	0.02
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		747.3	425.0	1172.3	.	111.0	111.0	747.3	536.0	1283.3	
95% CL		296.3	81.0	356.8	.	99.7	99.7	296.3	146.8	337.9	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1n. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 11, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9119	4476	.	4476	38	.	38	4514	.	4514	0.50
1975	8473	4501	.	4501	40	.	40	4541	.	4541	0.54
1976	8681	4164	.	4164	42	.	42	4206	.	4206	0.48
1977	7966	4096	.	4096	18	.	18	4114	.	4114	0.52
1978	8050	3996	.	3996	18	.	18	4014	.	4014	0.50
1979	6570	3430	.	3430	7	.	7	3437	.	3437	0.52
1980	10010	5069	.	5069	44	.	44	5113	.	5113	0.51
1981	12836	7062	.	7062	41	.	41	7103	.	7103	0.55
1982	15334	7338	.	7338	53	.	53	7391	.	7391	0.48
1983	15419	4769	.	4769	27	.	27	4796	.	4796	0.31
1984	15385	7019	.	7019	15	.	15	7034	.	7034	0.46
1985	13712	5823	.	5823	*	.	.	5823	.	5823	0.42
1986	15233	5546	.	5546	*	.	.	5546	.	5546	0.36
1987	11309	3829	.	3829	*	.	.	3829	.	3829	0.34
1988	14811	5033	.	5033	*	.	.	5033	.	5033	0.34
1989	11543	2960	.	2960	*	.	.	2960	.	2960	0.26
1990	12520	4446	.	4446	*	.	.	4446	.	4446	0.36
1991	7647	1853	.	1853	*	.	.	1853	.	1853	0.24
1992	8501	2273	1039	3312	*	1	1	2273	1040	3313	0.39
1993	11280	3084	664	3748	*	43	43	3084	707	3791	0.34
1994	10891	2280	674	2954	*	38	38	2280	712	2992	0.27
1995	14449	3255	938	4193	*	13	13	3255	951	4206	0.29
1996	16135	4035	1746	5781	*	26	26	4035	1772	5807	0.36
1997**		2311	2039	4350	*	133	133	2311	2172	4483	
1998**		1130	1516	2646	*	109	109	1130	1625	2755	
1999**		1225	1292	2517	*	70	70	1225	1362	2587	
2000**		1568	2626	4194	*	149	149	1568	2775	4343	
84-89 $\bar{X}$	14136.8	5276.2	.	5276.2	.	.	.	5279.2	.	5279.2	0.37
95% CL	1974.9	1844.8	.	1844.8	.	.	.	1850.3	.	1850.3	0.09
N	5	5	0	5	0	0	0	5	0	5	5
86-91 $\bar{X}$	12350.8	3967.6	.	3967.6	.	.	.	3967.6	.	3967.6	0.32
95% CL	3784.3	1897.3	.	1897.3	.	.	.	1897.3	.	1897.3	0.06
N	5	5	0	5	0	0	0	5	0	5	5
92-96 $\bar{X}$	12251.2	2985.4	1012.2	3997.6	0.0	24.2	24.2	2985.4	1036.4	4021.8	0.33
95% CL	3764.1	918.4	548.3	1365.6	0.0	21.6	21.6	918.4	541.9	1365.2	0.05
N	5	5	5	5	5	5	5	5	5	5	5
97-99 $\bar{X}$		1555.3	1615.7	3171.0	.	104.0	104.0	1555.3	1719.7	3275.0	
95% CL		1630.1	952.4	2541.7	.	79.0	79.0	1630.1	1026.6	2607.4	
N		3	3	3	0	3	3	3	3	3	

1987 DATA NOT INCLUDED IN MEAN

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1992-96 AND ON RETAINED FISH ONLY PRIOR TO 1992

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY)

Appendix 1o. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 12, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	1423	658	.	658	13	.	13	671	.	671	0.47
1975	1204	510	.	510	20	.	20	530	.	530	0.44
1976	926	297	.	297	5	.	5	302	.	302	0.33
1977	1238	558	.	558	48	.	48	606	.	606	0.49
1978	1305	366	.	366	20	.	20	386	.	386	0.30
1979	1711	733	.	733	10	.	10	743	.	743	0.43
1980	2175	820	.	820	29	.	29	849	.	849	0.39
1981	2035	1060	.	1060	17	.	17	1077	.	1077	0.53
1982	2810	1555	.	1555	15	.	15	1570	.	1570	0.56
1983	2648	667	.	667	8	.	8	675	.	675	0.25
1984	3590	1922	.	1922	68	.	68	1990	.	1990	0.55
1985	3722	1097	.	1097	*	30	30	1097	30	1127	0.30
1986	3430	938	.	938	*	34	34	938	34	972	0.28
1987	2212	831	.	831	*	27	27	831	27	858	0.39
1988	3607	1413	.	1413	*	23	23	1413	23	1436	0.40
1989	2657	560	.	560	*	10	10	560	10	570	0.21
1990	3060	856	.	856	*	30	30	856	30	886	0.29
1991	2761	644	.	644	*	15	15	644	15	659	0.24
1992	2831	639	466	1105	*	78	78	639	544	1183	0.42
1993	3362	745	155	900	*	22	22	745	177	922	0.27
1994	2853	593	137	730	*	48	48	593	185	778	0.27
1995	2679	507	87	594	*	41	41	507	128	635	0.24
1996***		716	282	998	*	53	53	716	335	1051	
1997**		634	468	1102	*	88	88	634	556	1190	
1998**		284	338	622	*	123	123	284	461	745	
1999**		147	97	244	*	28	28	147	125	272	
2000**		224	316	540	*	27	27	224	343	567	
84-89 $\bar{X}$	3203.0	1126.8	.	1126.8	.	24.8	32.0	1138.2	24.8	1158.8	0.36
95% CL	649.4	505.5	.	505.5	.	11.4	20.4	529.3	11.4	522.9	0.13
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	2954.5	873.7	.	873.7	.	23.2	23.2	873.7	23.2	896.8	0.30
95% CL	543.4	314.3	.	314.3	.	9.6	9.6	314.3	9.6	318.8	0.08
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	2931.3	640.0	225.4	865.4	.	48.4	48.4	640.0	273.8	913.8	
95% CL	473.2	118.9	189.3	254.6	.	25.2	25.2	118.9	210.7	268.8	
N	4	5	5	5	0	5	5	5	5	5	
97-99 $\bar{X}$		355.0	301.0	656.0	.	79.7	79.7	355.0	380.7	735.7	
95% CL		623.9	467.7	1068.3	.	119.4	119.4	623.9	562.6	1140.5	
N		3	3	3	0	3	3	3	3	3	

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-95 AND ON RETAINED FISH ONLY PRIOR TO 1985

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

***FOR RIVERS WHERE DFO DATA WERE UNAVAILABLE, LICENSE STUB RETURN DATA WERE USED

Appendix 1p. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 13, insular Newfoundland, 1974-2000. Ret. = retained fish, Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	29313	7189	.	7189	916	.	916	8105	.	8105	0.28
1975	32253	12003	.	12003	886	.	886	12889	.	12889	0.40
1976	32922	10383	.	10383	626	.	626	11009	.	11009	0.33
1977	24474	6712	.	6712	1049	.	1049	7761	.	7761	0.32
1978	19686	5289	.	5289	855	.	855	6144	.	6144	0.31
1979	16383	6009	.	6009	113	.	113	6122	.	6122	0.37
1980	21313	7913	.	7913	993	.	993	8906	.	8906	0.42
1981	23839	9300	.	9300	663	.	663	9963	.	9963	0.42
1982	25246	9566	.	9566	595	.	595	10161	.	10161	0.40
1983	25473	6337	.	6337	610	.	610	6947	.	6947	0.27
1984	22152	7771	.	7771	309	.	309	8080	.	8080	0.36
1985	20137	5302	.	5302	*	257	257	5302	257	5559	0.28
1986	25707	7346	.	7346	*	662	662	7346	662	8008	0.31
1987	20887	6018	.	6018	*	342	342	6018	342	6360	0.30
1988	24356	8217	.	8217	*	406	406	8217	406	8623	0.35
1989	18544	3174	.	3174	*	129	129	3174	129	3303	0.18
1990	21769	6652	.	6652	*	337	337	6652	337	6989	0.32
1991	21028	5188	.	5188	*	204	204	5188	204	5392	0.26
1992	21629	5430	540	5970	*	947	947	5430	1487	6917	0.32
1993	22521	5099	829	5928	*	732	732	5099	1561	6660	0.30
1994	19723	3632	936	4568	*	929	929	3632	1865	5497	0.28
1995	18107	3336	1164	4500	*	948	948	3336	2112	5448	0.30
1996***		4461	4644	9105	*	1236	1236	4461	5880	10341	
1997**		3785	6263	10048	*	2042	2042	3785	8305	12090	
1998**		2434	4061	6495	*	1679	1679	2434	5740	8174	
1999**		3627	3126	6753	*	1465	1465	3627	4591	8218	
2000**		3249	2819	6068	*	1010	1010	3249	3829	7078	
84-89 $\bar{X}$	21963.8	6304.7	.	6304.7	.	359.2	350.8	6356.2	359.2	6655.5	0.30
95% CL	2814.9	1979.3	.	1979.3	.	246.4	187.6	2033.4	246.4	2112.7	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	22048.5	6099.2	.	6099.2	.	346.7	346.7	6099.2	346.7	6445.8	0.29
95% CL	2715.2	1862.2	.	1862.2	.	194.0	194.0	1862.2	194.0	2017.4	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	20495.0	4391.6	1622.6	6014.2	.	958.4	958.4	4391.6	2581.0	6972.6	
95% CL	3140.5	1123.3	2115.3	2318.1	.	223.3	223.3	1123.3	2310.4	2478.9	
N	4	5	5	5	0	5	5	5	5	5	
97-99 $\bar{X}$		3282.0	4483.3	7765.3	.	1728.7	1728.7	3282.0	6212.0	9494.0	
95% CL		1835.0	4001.2	4921.6	.	724.7	724.7	1835.0	4723.9	5585.6	
N		3	3	3	0	3	3	3	3	3	

IN THE ABOVE TABLE A PERIOD INDICATES NO DATA FOR THAT YEAR.

CPUE IS BASED ON RETAINED + RELEASED FISH FOR 1985-95 AND ON RETAINED FISH ONLY PRIOR TO 1985.

* NOT ALLOWED TO RETAIN LARGE SALMON IN INSULAR NEWFOUNDLAND.

**DATA OBTAINED FROM THE LICENSE STUB RETURN (2000 DATA ARE PRELIMINARY).

***FOR RIVERS WHERE DFO DATA WERE UNAVAILABLE, LICENSE STUB RETURN DATA WERE USED.

Appendix 1q. Atlantic salmon recreational fishery catch and effort data for Salmon Fishing Area 14A, insular Newfoundland, 1974-2000. Ret. = retained fish; Rel. = released fish.

	Effort	Small (<63 cm)			Large (>= 63 cm)			Total (Small + Large)			
Year	Rod Days	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	Ret.	Rel.	Tot.	CPUE
1974	9569	3120	.	3120	113	.	113	3233	.	3233	0.34
1975	9259	4818	.	4818	90	.	90	4908	.	4908	0.53
1976	17146	7381	.	7381	100	.	100	7481	.	7481	0.44
1977	17067	5707	.	5707	472	.	472	6179	.	6179	0.36
1978	12069	3241	.	3241	72	.	72	3313	.	3313	0.27
1979	14285	6578	.	6578	59	.	59	6637	.	6637	0.46
1980	14219	3743	.	3743	180	.	180	3923	.	3923	0.28
1981	18718	5882	.	5882	137	.	137	6019	.	6019	0.32
1982	16113	4763	.	4763	107	.	107	4870	.	4870	0.30
1983	16020	3800	.	3800	69	.	69	3869	.	3869	0.24
1984	16497	4807	.	4807	87	.	87	4894	.	4894	0.30
1985	13388	3626	.	3626	*	28	28	3626	28	3654	0.27
1986	15382	5030	.	5030	*	102	102	5030	102	5132	0.33
1987	15061	4620	.	4620	*	41	41	4620	41	4661	0.31
1988	18968	6251	.	6251	*	171	171	6251	171	6422	0.34
1989	16223	3203	.	3203	*	44	44	3203	44	3247	0.20
1990	16413	5050	.	5050	*	136	136	5050	136	5186	0.32
1991	13850	3565	.	3565	*	117	117	3565	117	3682	0.27
1992	17117	4778	531	5309	*	369	369	4778	900	5678	0.33
1993	17858	3905	2002	5907	*	376	376	3905	2378	6283	0.35
1994	21046	4429	1097	5526	*	475	475	4429	1572	6001	0.29
1995	24159	6090	2087	8177	*	731	731	6090	2818	8908	0.37
1996	25876	6485	3008	9493	*	706	706	6485	3714	10199	0.39
1997**		3514	1822	5336	*	417	417	3514	2239	5753	
1998**		3608	3473	7081	*	469	469	3608	3942	7550	
1999**		3349	2375	5724	*	750	750	3349	3125	6474	
2000**		2790	2299	5089	*	388	388	2790	2687	5477	
84-89 $\bar{X}$	15919.8	4589.5	.	4589.5	.	77.2	78.8	4604.0	77.2	4668.3	0.29
95% CL	1944.1	1135.7	.	1135.7	.	74.1	56.2	1139.9	74.1	1186.6	0.06
N	6	6	0	6	0	5	6	6	5	6	6
86-91 $\bar{X}$	15982.8	4619.8	.	4619.8	.	101.8	101.8	4619.8	101.8	4721.7	0.30
95% CL	1812.7	1162.6	.	1162.6	.	54.0	54.0	1162.6	54.0	1199.9	0.06
N	6	6	0	6	0	6	6	6	6	6	6
92-96 $\bar{X}$	21211.2	5137.4	1745.0	6882.4	.	531.4	531.4	5137.4	2276.4	7413.8	0.35
95% CL	4747.0	1370.3	1189.5	2302.4	.	218.6	218.6	1370.3	1354.4	2504.4	0.05
N	5	5	5	5	0	5	5	5	5	5	5
97-99 $\bar{X}$		3490.3	2556.7	6047.0	.	545.3	545.3	3490.3	3102.0	6592.3	
95% CL		325.7	2087.7	2276.3	.	445.1	445.1	325.7	2116.0	2246.7	
N		3	3	3	0	3	3	3	3	3	

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